

3262

Building Air
Concentration

INTER- COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE January 11, 1954


ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly . SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y-12RC
H. M. McLeod, Jr. File

The following air samples were taken during the week ending January 10, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	145	0.0	.56	.16	104
<u>Building 9201-2</u> 2nd Floor Dev. Area	33	.08	.33	.20	31
Large Colex Tray	60	0.0	.59	.20	43


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTER-COMPANY CORRESPONDENCE

(V T) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO List
LOCATION

DATE January 18, 1954


ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File

The following air samples were taken during the week ending January 17, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	138	.02	.64	.16	101
<u>Building 9201-2</u> 2nd Floor Dev. Area	33	.03	.53	.24	29
Large Colex Tray	30	0.0	.43	.14	15


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE January 25, 1954


ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly **SUBJECT** Weekly Solvent Report
 G. W. Clewett C. R. Sullivan, Jr., M. D.
 L. P. Twichell H. T. Kite
 L. W. Bagwell Joe Williams
 G. W. Mitchell M. J. Fortenberry
 G. A. Strasser Edw. G. Struxness, Y12RC
 H. M. McLeod, Jr. File

The following air samples were taken during the week ending January 24, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX+	145	.06	.60	.21	124
<u>Building 9201-2</u> 2nd. Floor Dev. Area	52	0.0	.39	.19	43
1st. Floor Lab.	10	.06	.11	.09	1


 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department

WHB:GBA:cs

CHR2-0194

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE February 1, 1954

ANSWERING LETTER DATE


ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File
J. W. Ebert

The following air samples were taken during the week ending January 31, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	114	.02	.88	.27	99
<u>Building 9201-2</u> 2nd. Floor Dev. Area	55	.06	.92	.23	50
Colex Column	10	.06	.28	.17	.8
Colex Tray # 1	52	0.0	.68	.22*	40

* Extremely high results on the day this system was being started caused this high average.


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE February 8, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
C. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File /
J. W. Ebert

The following air samples were taken during the week ending February 7, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u>					
OREX					
1st. Floor	24	.11	.75	.33	24 792
Mezz. Floor	28	.05	.73	.25	26 700
2nd. Floor	40	0.0	.50	.22	31 880
3rd. Floor	24	.04	.64	.28	21 672
Pent House	4	.50	.64	.52	4 208
	120				106 3252
<u>Building 9201-2</u>					
2nd. Floor Dev. Area	45	.04	.41	.16	35
C.T.F.	12	.07	.15	.11	7
Colex Tray #2	16	.06	.19	.10	4
Colex Tray #1	26	.03	.40	.15	13
Colex Column	30	.10	.24	.15	27

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTEL. COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE February 15, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

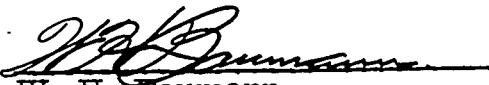
J. P. Murray
G. W. Flack
C. W. Clewett
L. P. Twichell
L W. Bagwell
G. W. Mitchell
G. A. Strasser
H. M. McLeod, Jr.

J. W. Ebert
R. C. Kelly
C. R. Sullivan, Jr., M. D.
H. T. Kite
Joe Williams
J. J. Fortenberry
Edw. G. Struzness, Y12RC
File -

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending February 14, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u>					
OREX, 1st. Floor	12	.12	.62	.22	12
Mezz. Floor	14	.10	.64	.21	13
2nd. Floor	20	.03	.28	.11	9
3rd. Floor	12	.02	.20	.11	5
					avg. .16 39
<u>Building 9201-2</u>					
Colex Tray #1	52	.04	.49	.17	31
Colex Tray #2	16	.03	.25	.08	3
Colex Column	20	.06	.18	.10	10
2nd. Floor Dev. Area	30	.03	.53	.15	21


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTER-COMPANY CORRESPONDENCE


(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List DATE February 22, 1954
LOCATION ANSWERING LETTER DATE

ATTENTION
COPY TO J. P. Murray J. W. Ebert SUBJECT Weekly Solvent Report
G. W. Flack R. C. Kelly
C. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File

The following air samples were taken during the week ending February 21, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u>					
OREX					
1st. Floor	12	.11	.91	.28	12
Mezz. Floor	12	.11	1.21	.35	12
2nd. Floor	20	.06	1.25	.24	14
3rd. Floor	12	.04	.22	.14	10
<u>Building 9201-2</u>					
Colex Tray #2	16	.03	.14	.09	5
Colex Tray #1	26	.03	.28	.13	15
2nd. Floor Dev.	31	.02	.40	.10	9
Colex Column	20	.07	.16	.11	9


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

GBA:cs

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE March 1, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert
G. W. Flack R. C. Kelly
C. W. Clewett C. R. Sullivan, Jr., M.D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File


SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending February 28, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of 0.1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9202</u>					
OREX					
1st. Floor	29	.07	.58	.21	26
Mezz. Floor	36	.03	.60	.18	29
2nd. Floor	50	.06	.46	.14	29
3rd. Floor	30	.03	.20	.11	16
<u>Bldg. 9201-2</u>					
Colex Tray #2	8	.09	.43	.21	7 **
Colex Tray #1	26	.04	.68	.21	16 **
2nd. Floor Dev. Area	45	.04	.33	.10	16
Colex Column	10	.03	.06	.04	0

* The air levels in these areas show a decrease over those of prior weeks due to better ventilation and improved housekeeping.

** These two areas were down for repair during the latter part of the week, causing the average concentration to be higher than for the previous week.


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

INTEI COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE March 8, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray

J. W. Ebert

SUBJECT Weekly Solvent Report

~~G. W. Flack~~

R. C. Kelly

C. W. Clewett

C. R. Sullivan, Jr., M. D.

L. P. Twichell

H. T. Kite

L. W. Bagwell

Joe Williams

G. W. Mitchell

M. J. Fortenberry

G. A. Strasser


Edw. G. Struxness, Y12RC

H. M. McLeod, Jr. File

The following air samples were taken during the week ending March 7, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>9202 OREX</u>					
1st. Floor	24	.06	.28	.14	15
Mezz. Floor	28	.10	.28	.18	27
2nd. Floor	40	.05	.88	.12	14
3rd. Floor	24	.05	.18	.09	7
					<u>62</u>
<u>9201-2</u>					
2nd. Floor Dev. Area	30	.04	.23	.08	6
Colex Tray #1	26	.04	.27	.13	13*
Colex Tray #2	16	.04	.10	.07	0
Colex Column	20	.05	.09	.07	0

* This area averaged above the Maximum Permissible Limit because the samples taken over sink, titration table, and pumps showed consistantly high air levels


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

GBA:cs

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE March 15, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert SUBJECT Weekly Solvent Report
~~G. W. Flack~~ R. C. Kelly
 C. H. Clewett C. R. Sullivan, Jr., M. D.
 L. P. Twichell H. T. Kite
 L. W. Bagwell Joe Williams
 G. W. Mitchell M. J. Fortenberry
 G. A. Strasser Edw. G. Struxness, Y12RC
 H. M. McLeod, Jr. File

The following air samples were taken during the week ending March 14, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9202</u>					
OREX					
1st. Floor	24	.05	.58	.19	20 } 4.56
Mezz. Floor	28	.07	.91	.28	25 } 7.84
2nd. Floor	40	.04	.32	.12	22 } 4.80
3rd. Floor	24	.06	.31	.17	23 } 4.08
Penthouse	12	.17	.24	.21	12 } 2.52
	<u>100</u>			<u>avg. .19</u>	<u>102</u> } <u>23.80</u>
<u>Bldg. 9201-2</u>					
Colex Column	10	.05	.08	.06	0
2nd. Floor Dev. Area	30	.03	.30	.09	7
Colex Tray # 1	26	.02	.43	.10	7
Colex Tray # 2	16	.03	.13	.07	1
	<u>82</u>				<u>15</u>

* This building is in the process of being decontaminated and is no longer in operation.

W. H. Baumann
 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE March 22, 1954


ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. C. Kelly SUBJECT Weekly Solvent Report
G. A. Strasser C. R. Sullivan, Jr., M. D.
G. H. Clewett H. T. Kite
L. P. Twichell Joe Williams
L. W. Bagwell M. J. Fortenberry
G. W. Mitchell Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File
J. W. Ebert

The following air samples were taken during the week ending March 21, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>9202 OREX</u>					
1st. Floor	12	.07	.31	.16	9 1.92
Mezz. Floor	14	.09	.21	.13	10 1.52
2nd. Floor	20	.04	.17	.09	6 1.80
3rd. Floor	12	.03	.18	.11	8 1.32
					?? 6.56
<u>Bldg. 9201-2</u>					
Colex Tray #1	26	0.0	.13	.05	3
Colex Tray #2	8	.04	.09	.06	0
2nd. Floor Dev. Area	30	.05	.21	.11	9
Colex Column	10	.04	.09	.06	0
P. T. F.	13	0.0	.27	.10	4
	57				16


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE March 29, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
G. A. Strasser
G. H. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchell
H. M. McLeod, Jr.
J. W. Ebert


~~R. G. Kelly~~
C. R. Sullivan, Jr., M. D.
H. T. Kite
~~M. J. Fortenberry~~
~~Edw. G. Strassner~~, Y12RC
~~Joe Williams~~
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending March 28, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³ Low High Avg.			No. of Samples > MPL of .1 mg/M ³
<u>Bldg. 9202 Orex</u>					
1st. Floor	18	.15	.46	.24	18
Mezz. Floor	21	.07	.36	.23	20
2nd. Floor	30	0.0	.34	.13	17
3rd. Floor	15	.11	.31	.21	15
Penthouse	8	.20	.91	.43	8
<u>Bldg. 9201-2</u>					
Colex Tray #2	16	.04	.12	.07	2
Colex Tray #1	26	.03	.15	.06	4
P.T.F. Area	13	.07	.18	.14	10
Colex Column	20	.01	.16	.07	3
Colex Col. 1st Floor	6	.09	.68	.36	5*
2nd. Floor Develop- ment	30	.02	.19	.08	11

* Three of these six samples were taken while draining solvent and removing packing from the column. The area was sampled for the first time this week.


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

VHB:GBA:CS

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE April 5, 1954


ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. C. Kelly SUBJECT Weekly Solvent Report
G. A. Strasser C. R. Sullivan, Jr., M. D.
G. H. Clewett H. T. Kite
L. P. Twichell M. J. Fortenberry
L. W. Bagwell L. C. Emerson, Y12RC
G. W. Mitchell Joe Williams
H. M. McLeod, Jr. File
J. W. Ebert

The following air samples were taken during the week ending April 4, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9202 OREX</u>					
1st. Floor	12	.02	.21	.09	5 1.08
Mezz. Floor	19	.03	.22	.09	6 1.71
2nd. Floor	30	.02	.17	.06	6 1.36
3rd. Floor	18	.01	.14	.06	3 1.08
Penthouse	8	.02	.18	.10	4 . . .
	<u>87</u>				<u>24</u> 6.47
<u>Bldg. 9201-2</u>					
2nd. Floor Dev. Area	45	0.0	.27	.09	12
Colex Tray #1	52	.02	.34	.09	12
Colex Column	30	.03	.12	.07	5
P.T.F. Area	13	.02	.08	.05	0
Colex Tray #2	16	.04	.14	.08	4
1st. Floor Lab	8	0.0	.04	.02	0
					<u>33</u>


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

GBA:cs

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY



Y/HG-0106

~~Y-12 CENTRAL FILES~~

~~RECORD COPY~~

Y-DI-1

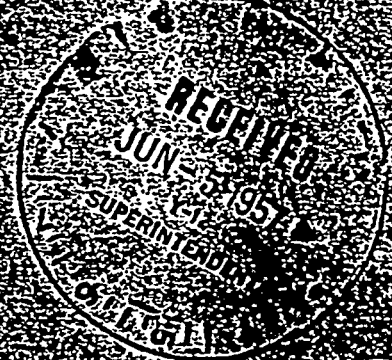
1a

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PER CURRENT CLASSIFICATION GUIDES
DATE ~~1/1/79~~ SIGNED ~~[Signature]~~

PRELIMINARY REPORT ON PERSONNEL EXPOSURE
TO MERCURY IN THE COLEX PLANTS

~~Y-12 CENTRAL FILES~~

APPROVED FOR PUBLIC RELEASE
DATE ~~1/1/79~~ BY ~~[Signature]~~



Y-12 PLANT

UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation
OXFORD BRIDGE, TENNESSEE

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CLASSIFICATION
OFFICE REVIEW
1979

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Y/HG-0106

PRELIMINARY REPORT ON PERSONNEL EXPOSURE TO MERCURY IN THE COLEX PLANTS

This Document Contains 23 Pages

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BY *L. R. Phillips*
BY *M. J. Goss* DATE *11-26-75*

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

May 28, 1957

INVENTORIED AUG 26 1963

APPROVED FOR PUBLIC RELEASE
[Signature]
Technical Information Office Date *4/5/84*

from Y/H6-0106

Air Sample Concentration Distribution - Bldg. 9201-5

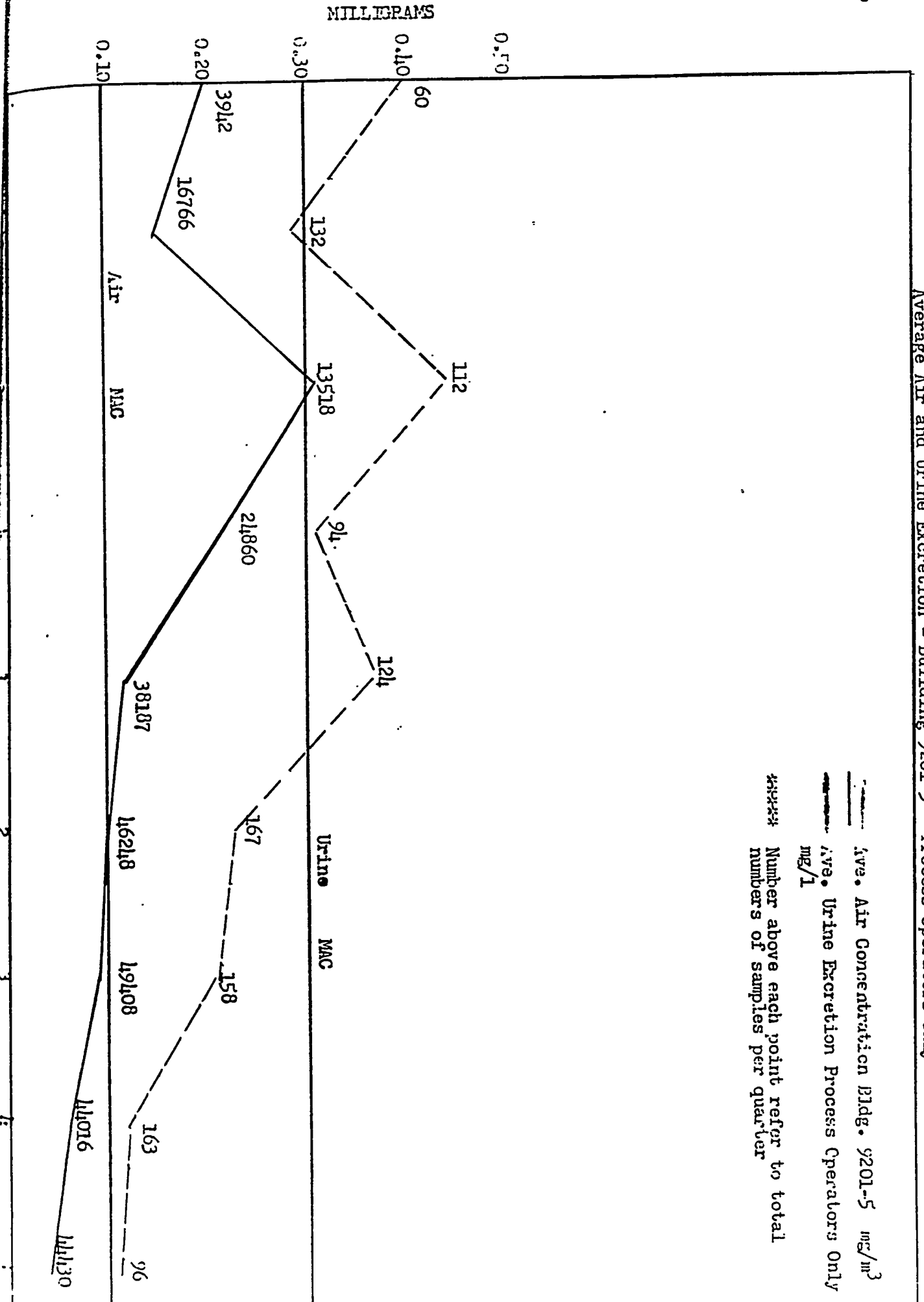
Month & Year	No. of Samples	% <0.10	% 0.10-0.19	% 0.20-0.29	% 0.30-0.39	% 0.40-0.49	% 0.50-0.59	% 0.60-0.69	% 0.70-0.79	% 0.80-0.89	% 0.90-0.99	% >1.00	Bldg. Ave. Con. mg/m ³
Jan. '55	880	13.2	44.7	24.4	10.1	5.0	13.1	0.7	0.5	0.1	0.1	0.1	0.23
Feb.	1090	41.8	34.3	13.6	5.8	2.0	0.6	0.6	0.2	0.1	0.1	0.1	0.17
Mar.	1972	40.9	30.2	13.1	5.3	4.7	2.4	1.2	0.9	0.6	0.2	0.2	0.21
April	6592	49.2	32.6	12.8	3.2	1.3	0.4	0.2	0.1	0.0†	0.0†	0.0†	0.12
May	6012	47.0	38.0	10.2	3.2	1.1	0.6	0.3	0.3	0.2	0.1	0.0†	0.13
June	4162	29.9	32.2	16.0	7.9	6.0	3.3	1.6	1.2	0.9	0.4	0.4	0.21
July	3328	12.0	25.0	18.0	11.0	10.0	7.5	5.0	3.5	2.3	1.4	3.0	0.33
Aug.	4098	13.0	22.0	18.0	14.0	9.0	8.0	5.0	3.0	3.0	1.0	4.0	0.33
Sept.	6092	13.0	24.0	24.0	17.0	10.0	6.7	2.5	1.3	0.8	0.3	0.4	0.27
Oct.	9052	15.0	39.0	22.7	10.9	5.5	3.1	1.4	1.0	0.6	0.2	0.5	0.23
Nov.	7429	23.0	40.0	20.1	6.8	4.3	2.4	1.1	0.6	0.5	0.1	0.9	0.21
Dec.	8379	23.0	39.0	25.0	8.4	3.1	0.9	0.4	0.2	0.1	0.1	0.3	0.20
Jan. '56	9556	31.0	45.6	16.0	5.0	1.4	0.4	0.3	0.1	0.1	0.1	0.2	0.15
Feb.	13605	50.3	39.3	8.1	1.5	0.5	(	(	0.3	0.3	0.1	0.2	0.11
Mar.	15026	77.5	19.0	2.4	0.5	0.2	(	(	0.3	(	(	(	0.09
April	17027	72.0	22.0	4.0	1.0	0.3	(	(	0.7	(	(	(	0.10
May	15219	74.6	21.0	3.5	0.6	0.1	(	(	0.2	(	(	(	0.10
June	14182	73.9	20.0	4.2	1.1	0.5	(	(	0.3	(	(	(	0.10
July	15679	69.1	24.4	4.4	1.5	0.4	(	(	0.2	(	(	(	0.10
Aug.	18430	70.0	22.5	5.0	1.6	0.5	(	(	0.4	(	(	(	0.10
Sept.	15299	78.9	16.9	2.5	0.8	0.4	(	(	0.5	(	(	(	0.07
Oct.	15868	83.3	13.8	1.9	0.5	0.2	(	(	0.3	(	(	(	0.07
Nov.	15017	89.8	8.7	1.2	0.2	0.1	(	(	0.1	(	(	(	0.07
Dec.	13131	91.7	7.4	0.6	0.2	0.1	(	(	0.1	0.1	(	(	0.05
Jan. '57	15726	96.3	3.4	0.3	0.1	0.1	(	(	0.1	0.1	(	(	0.01
Feb.	13601	96.6	3.1	0.2	0.1	0.1	(	(	0.0	0.0	(	(	0.01
Mar.	14103	97.2	2.7	0.1	0.0	0.0	(	(	0.0	0.0	(	(	0.01

Air Sample Concentration Distribution - Bldg. 9201-4

<u>Month & Year</u>	<u>No. of Samples</u>	<u>% <0.10</u>	<u>% .10-.19</u>	<u>% .20-.29</u>	<u>% .30-.39</u>	<u>% .40-.49</u>	<u>% .50-.59</u>	<u>% .60-.69</u>	<u>% .70-.79</u>	<u>% .80-.89</u>	<u>% .90-.99</u>	<u>% >1.00</u>	<u>Bldg. Ave. Con. Mg/m³</u>
May '55	399	78.8	18.0	2.0	0.8	3.8	0.3	0.9	0.4	0.1	0.4	0.5	NR 0.13
June	2014	49.5	23.5	12.1	7.0	20.0	1.9	4.1	1.7	1.3	0.4	0.8	0.32 ✓
July	2802	6.4	14.6	22.0	20.5	8.8	8.8	0.4	0.2	0.1	0.1	0.1	0.22
Aug.	4107	15.0	41.0	29.0	9.0	4.0	1.2	0.8	0.3	0.1	0.1	0.1	0.24
Sept.	7518	12.0	52.0	23.0	7.5	3.3	0.9	0.8	0.8	0.4	0.3	0.5	0.24
Oct.	5686	17.0	46.0	21.2	6.8	3.7	2.0	1.4	0.1	0.1	0.0	0.4	0.24
Nov.	5734	23.2	45.5	19.2	6.5	3.3	1.3	0.6	0.1	0.8	0.4	1.8	0.21
Dec.	7073	19.0	36.0	20.0	10.0	6.6	2.7	1.9	1.2	0.4	0.4	1.8	0.28
Jan. '56	7224	27.5	45.0	14.0	6.0	4.0	1.6	0.7	0.3	0.4	0.2	0.3	0.20
Feb.	8492	59.0	34.0	4.6	1.6	0.5	(		0.4				0.11
Mar.	10373	90.3	8.7	0.7	0.1	0.0	(		0.1				0.06 ✓
April	10116	96.0	3.0	0.2	0.1	0.1	(		0.0				0.05
May	11199	94.8	4.9	0.3	0.0	0.0	0.0		0.0				0.05
June	10943	95.3	4.1	0.5	0.1	0.0	(		0.0				0.06
July	10676	94.3	5.2	0.4	0.1	0.0	(		0.0				0.05
Aug.	11416	97.0	2.9	0.3	0.1	0.0	(		0.0				0.04
Sept.	7417	98.4	1.5	0.1	0.0	0.0	(		0.4				0.04 ✓
Oct.	7569	94.8	3.3	0.7	0.3	0.2	(						0.04 ✓
Nov.	8962	96.8	3.0	(	0.3		(						0.04 ✓
Dec.	8132	96.2	3.4	0.3	0.1	0.0	(						0.04 ✓
Jan. '57	11104	92.1	6.6	1.0	0.3	0.1	(		0.2				0.04 ✓
Feb.	9450	95.4	4.1	0.4	0.1	0.0	(	0.0					0.04 ✓
Mar.	9619	98.0	1.8	0.1	0.0	0.0	(		0.1				0.03 ✓

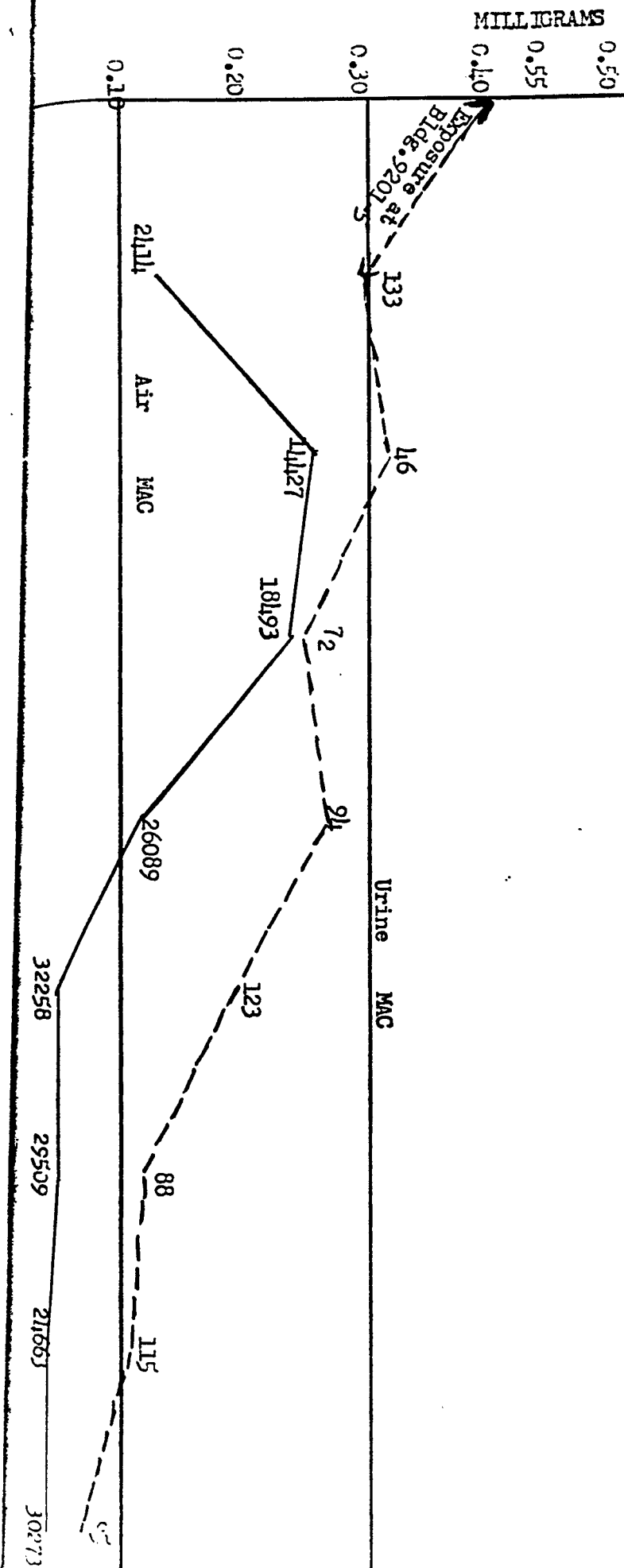
Average Air and Urine Excretion - Building 9201-5 - Process Operators Only

--- Ave. Air Concentration Bldg. 9201-5 mg/m^3
 - - - Ave. Urine Excretion Process Operators Only mg/l
 ***** Number above each point refer to total numbers of samples per quarter



Average Air and Urine Excretion - Building 9201-4 - Process Operators Only

_____ Ave. Air Concentration: Bldg. 9201-4 mg/m^3
 ----- Ave. Urine Excretion Process Operators Only
 mg/l
 ***** Numbers at each point refer to total number of
 samples per quarter.



Abstract

This report presents a summary of the air and urine data obtained from January 1, 1955 thru March 31, 1957 during the start-up and operating of the Colex plants in Building 9201-5 and 9201-4.

Data with reference to the efficacy of showers in reducing excretory levels of mercury in urine to exposed personnel is also presented.

Follow up data along with excretory levels is presented for personnel who were removed from Colex operations for various reasons.

The use of personnel detector badge for mercury along with results is also discussed.

Correllation of air concentration versus urine excretion is presented where applicable.

Introduction

The processes of the Colex operation in Buildings 9201-5 and 9201-4 entailed the use of large quantities of mercury. The nature of the process preicated a mercury inhalation problem to operating and maintenance personnel. Consequently, a program was established by the Medical Department and the Industrial Hygienist to evaluate the potential health hazard from exposure to mercury.

This program consisted of three major parts, namely, periodic medical and clinical examinations of exposed personnel, an air sampling program to establish the average atmospheric concentrations of mercury vapor in the various operating areas and a periodic urine sampling of all exposed personnel to determine their excretion levels of mercury.

Various other studies such as the efficacy of showers, a personnel detector device for integrated exposure calculations to mercury vapor, and elimination studies on personnel removed from exposure were also carried out.

Medical and Clinical Examinations on Exposed Personnel

Routine examinations on exposed personnel were performed every three months. Clinical laboratory tests were performed at each examination and each exposed person was seen by a doctor every other three months to check for the classical symptoms of mercury poisoning.

If an individual had albumin in his laboratory specimen he was re-checked and if this albuminuria persisted for three consecutive examinations during the week following the initial positive finding he was removed from further exposure to mercury vapor and followed until the findings were negative. In following the individuals who have been removed, the albuminuria persists for long periods of time.

Air Sampling Program

A routine air sampling program was followed in all the operating areas of the Colex plants. The frequency of sampling varied as the necessity demanded. For the most part daily observations were made in nearly all areas.

The method of air analysis used was that of the ultra violet absorption spectra of mercury vapor at 2537 angstrom. The instrument used was the General Electric Instantaneous Vapor Detector which produced consistent results. A program of instrument maintenance and calibration was maintained to assure the reliability of the readings.

Mercury concentrations were also determined by chemical methods as a cross check on the ultra violet absorption method and in cases where the suspected concentration exceeded the operating range of the General Electric Instantaneous Vapor detector.

Average general area, average buildings and sample distribution by concentration range are presented for buildings 9201-1 and 9201-5.

Urine Program

A routine sampling schedule was established with a frequency of once every three months for all exposed personnel. More frequent sampling was performed on select groups for various reasons.

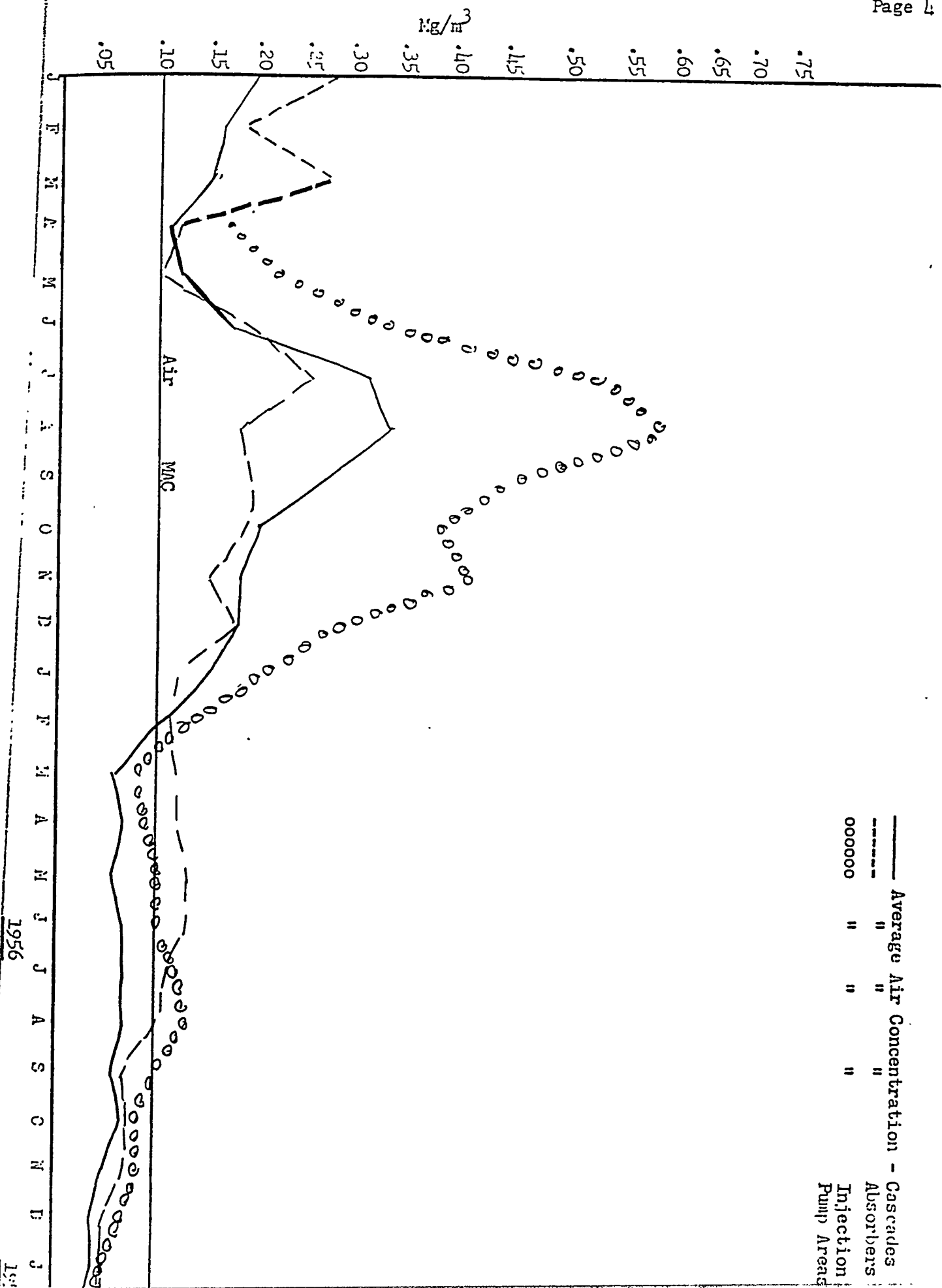
All analyses were performed by a modified dithizone method. A program of control urines was run simultaneously with the routine samples.

Summary tables and graphs are presented which show the trends of average group excretion levels of mercury in milligrams per liter of urine along with a distribution pattern of the samples.

Special Studies

Certain special studies were done to determine whether or not showers would be beneficial towards a lower level of excretion in exposed personnel and also how long a time period was necessary to clear mercury from the body after an exposed individual was removed from contact with mercury and mercury vapor.

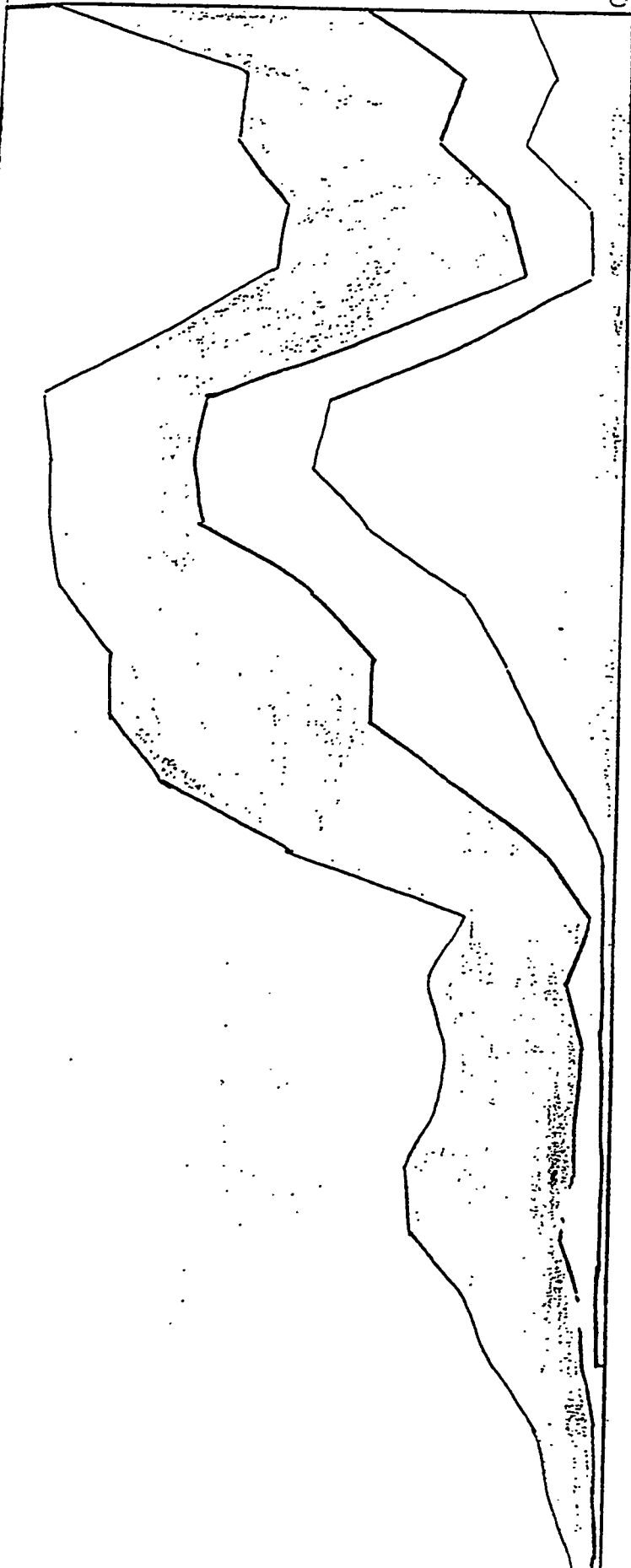
Some preliminary studies were performed to determine the validity of a badge detector as an integrating exposure guide versus urine excretion levels.



— Average Air Concentration - Cascades
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 000000 " " " " " " " "
 Injection Pump Areas

% of Samples

100
90
80
70
60
50
40
30
20
10
0



% Samples equal to or greater than 0.30 mg/m³

% Samples from 0.20 - 0.29 mg/m³

% Samples from 0.10 - 0.19 mg/m³

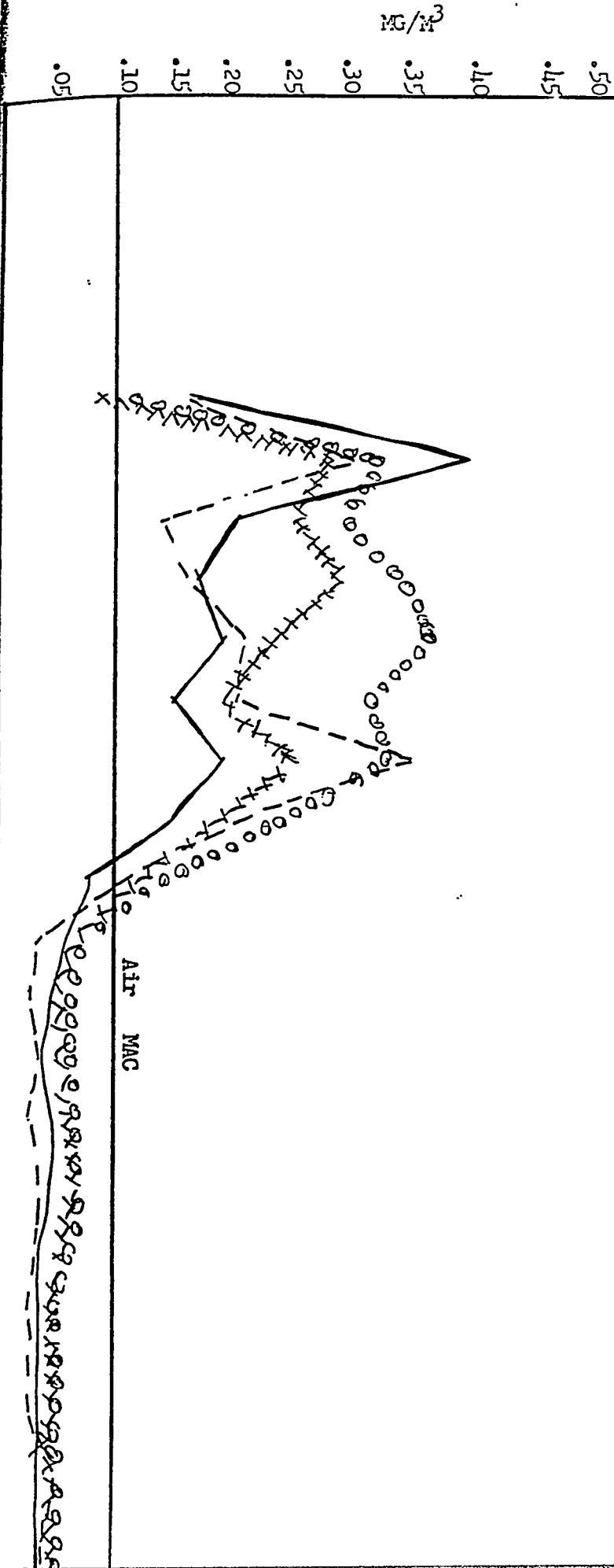
% Samples less than the 0.10 mg/m³

Air Sample Concentration Distribution - Bldg. 9201-5

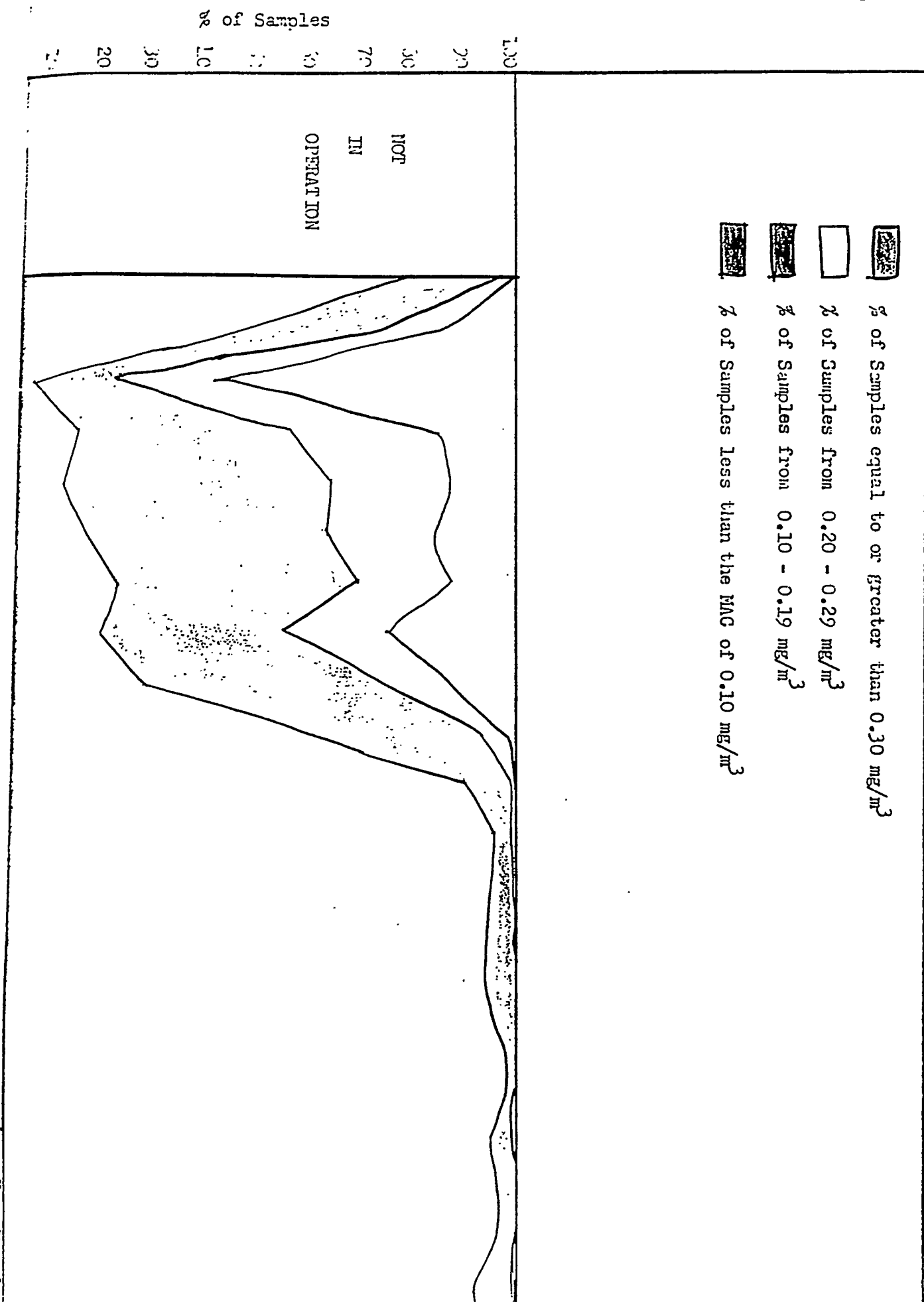
Month & Year	No. of Samples	% ≤ 0.10	% 0.10-0.19	% 0.20-0.29	% 0.30-0.39	% 0.40-0.49	% 0.50-0.59	% 0.60-0.69	% 0.70-0.79	% 0.80-0.89	% 0.90-0.99	% ≥ 1.00	Bldg. A Conc. mg
Jan. '55	880	13.2	44.7	24.4	10.1	5.0	13.1	0.7	0.5	0.1	0.1	0.1	0.23
Feb.	1090	41.8	34.3	13.6	5.8	2.0	0.6	0.6	0.2	0.1	0.1	0.1	0.17
Mar.	1972	40.9	30.2	13.1	5.3	4.7	2.4	1.2	0.9	0.6	0.2	0.2	0.21
April	6592	49.2	32.6	12.8	3.2	1.3	0.4	0.2	0.1	(0.0 ⁺	0.0 ⁺	0.0	0.12
May	6012	47.0	38.0	10.2	3.2	1.1	0.6	0.3	0.3	0.2	0.1	0.0 ⁺	0.13
June	4162	29.9	32.2	16.0	7.9	6.0	3.3	1.6	1.2	0.9	0.4	0.4	0.21
July	3328	12.0	25.0	18.0	11.0	10.0	7.5	5.0	3.5	2.3	1.4	3.0	0.35
Aug.	4098	13.0	22.0	18.0	14.0	9.0	8.0	5.0	3.0	3.0	1.0	4.0	0.33
Sept.	6092	13.0	24.0	24.0	17.0	10.0	6.7	2.5	1.3	0.8	0.3	0.4	0.27
Oct.	9052	15.0	39.0	22.7	10.9	5.5	3.1	1.4	1.0	0.6	0.2	0.5	0.23
Nov.	7429	23.0	40.0	20.1	6.8	4.3	2.4	1.1	0.6	0.5	0.1	0.9	0.21
Dec.	8379	23.0	39.0	25.0	8.4	3.1	0.9	0.4	0.2	0.1	0.1	0.3	0.20
Jan. '56	9556	31.0	45.6	16.0	5.0	1.4	0.4	0.3	0.1	0.1	0.1	0.2	0.15
Feb.	13605	50.3	39.3	8.1	1.5	0.5			0.3				0.11
Mar.	15026	77.5	19.0	2.4	0.5	0.2			0.3				0.09
April	17027	72.0	22.0	4.0	1.0	0.3			0.7				0.10
May	15219	74.6	21.0	3.5	0.6	0.1			0.2				0.10
June	14182	73.9	20.0	4.2	1.1	0.5			0.3				0.10
July	15679	69.1	24.4	4.4	1.5	0.4			0.2				0.10
Aug.	18430	70.0	22.5	5.0	1.6	0.5			0.4				0.10
Sept.	15299	78.9	16.9	2.5	0.8	0.4			0.5				0.07
Oct.	15868	83.3	13.8	1.9	0.5	0.2			0.3				0.07
Nov.	15017	89.8	8.7	1.2	0.2	0.1			0.1				0.07
Dec.	13131	91.7	7.4	0.6	0.2	0.1			0.1				0.05
Jan. '57	15726	96.3	3.4	0.3	0.1	0.1			0.1				0.04
Feb.	13601	96.6	3.1	0.2	0.1	0.1			0.0				0.04
Mar.	14103	97.2	2.7	0.1	0.0	0.0			0.0				0.04

DUJ LUTIK 2601-4

average Air Concentration - Cascades
 ----- " " "
 xxxxxx " " "
 oooooo " " "
 Absorbers
 Injection Pump
 Hanging Garden



Air Sample Distribution by Concentration Range - Building 9201-1



Month & Year	No. of Samples	$\frac{\%}{<0.10}$	$\frac{\%}{.10-.19}$	$\frac{\%}{.20-.29}$	$\frac{\%}{.30-.39}$	$\frac{\%}{.40-.49}$	$\frac{\%}{.50-.59}$	$\frac{\%}{.60-.69}$	$\frac{\%}{.70-.79}$	$\frac{\%}{.80-.89}$	$\frac{\%}{.90-.99}$	$\frac{\%}{>1.00}$	Bldg. Ave. Con. Hg./m
May '55	399	78.8	18.0	2.0	0.8	3.8	0.3	0.9	0.4	0.1	0.4	0.5	0.13
June	2014	49.5	23.5	12.1	7.0	20.0	1.9	0.9	0.4	0.1	0.4	0.8	0.32
July	2802	6.4	14.6	22.0	20.5	4.0	8.8	4.1	0.2	1.3	0.1	0.1	0.22
Aug.	4107	15.0	41.0	29.0	9.0	4.0	1.2	0.4	0.8	0.1	0.1	0.1	0.24
Sept.	7518	12.0	52.0	23.0	7.5	3.3	0.9	0.8	0.3	0.4	0.3	0.5	0.24
Oct.	5686	17.0	46.0	21.2	6.8	3.7	2.0	1.4	0.8	0.1	0.0	0.4	0.21
Nov.	5734	23.2	45.5	19.2	6.5	3.3	1.3	0.6	0.1	0.8	0.4	1.8	0.28
Dec.	7073	19.0	36.0	20.0	10.0	6.6	2.7	1.9	1.2	0.8	0.4	1.8	0.28
Jan. '56	7224	27.5	45.0	14.0	6.0	4.0	1.6	0.7	0.3	0.4	0.2	0.3	0.20
Feb.	8492	59.0	34.0	4.6	1.6	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.11
Mar.	10373	90.3	8.7	0.7	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.06
April	10116	96.0	3.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.05
May	11199	94.8	4.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
June	10943	95.3	4.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06
July	10676	94.3	5.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
Aug.	11116	97.0	2.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04
Sept.	7417	98.4	1.5	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.04
Oct.	7569	94.8	3.3	0.7	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.04
Nov.	8962	96.8	3.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04
Dec.	8132	96.2	3.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04
Jan. '57	11104	92.1	6.6	1.0	0.3	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.04
Feb.	9450	95.4	4.1	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.04
Mar.	9619	98.0	1.8	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.03

SummarySolvent Urine Excretion Data

	<u>1955</u> <u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>1956</u> <u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>1957</u> <u>1st.Q.</u>
Number of people sampled	515	776	756	793	931	1090	888	889	905
Number of samples	521	998	868	921	1875	1948	1301	1213	1104
% of samples X MAC of 0.30 mg/l	30	24	34	26	29.5	26.5	15	9.6	6.1
% of people X MAC of 0.30 mg/l	30	21.6	32	28	27.5	29	18.2	12.0	6.7
% of samples X 0.55 mg/l	13.3	10.7	13.9	7.1	5.1	6.0	2.0	1.2	0.6
% of people X 0.55 mg/l	10.8	10.2	10.9	5.7	5.2	6.5	2.6	1.7	0.7

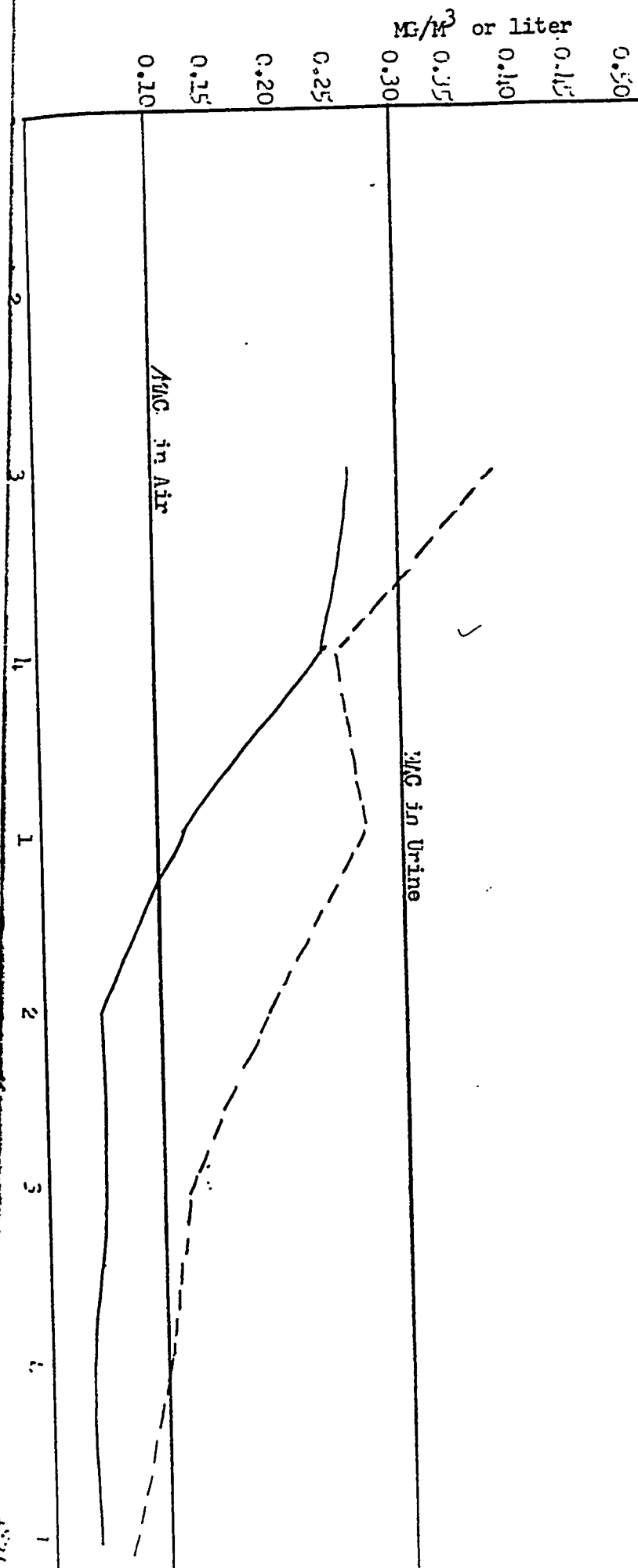
Average Group Excretion Rates in MG/L

	1955				1956				1957			
	<u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>
Bldg. 9201-5 Process Operators	0.46	0.40	0.44	0.32	0.35	0.23	0.21	0.13	0.15			
Bldg. 9201-4 Process Operators	-	-	0.38	0.25	0.27	0.19	0.12	0.10	0.07			
Bldg. 9201-5 Process Supervision & Staff			0.38	0.28	0.22	0.19	0.21	0.12	0.09			
Bldg. 9201-4 Process Supervision & Staff			0.37	0.35	0.29	0.10	0.13	0.05	0.09			
Process Auxiliaries	-	-	0.18	0.15	0.18	0.16	0.13	0.07	0.06			
Window and Wall Washers				0.40	0.45	0.41	0.27	0.39	-			
Bldg. 9201-5 Outside Machinists Shop	0.50	0.39	0.47	0.37	0.63	0.43	0.39	0.34	0.28			
Bldg. 9201-4 Outside Machinists Shop	-	-	0.59	-	0.61	0.43	0.21	0.29	0.27			
Bldg. 9201-5 Outside Machinists Field	0.35	0.40	0.48	0.40	0.38	0.40	0.21	0.19	0.22			
Bldg. 9201-4 Outside Machinists Field	-	-	0.47	0.43	0.54	0.30	0.20	0.23	0.16			
Bldg. 9201-5 Outside Machinists Lab.	0.22	0.24	0.13	0.50	0.17	0.21	0.16	0.08	-			
Bldg. 9201-4 Outside Machinists Lab.	-	-	0.19	0.39	0.22	0.25	0.16	0.12	-			
Bldg. 9201-5 Pipefitters	0.30	0.28	0.54	0.44	0.32	0.42	0.29	0.26	0.25			
Bldg. 9201-4 Pipefitters	-	-	0.40	0.23	0.27	0.38	0.24	0.20	0.17			
Bldg. 9201-5 Electricians	0.12	0.10	0.22	0.20	0.22	0.17	0.12	0.09	0.12			
Bldg. 9201-4 Electricians	-	-	0.24	0.12	0.14	0.20	0.08	0.09	0.11			
Bldg. 9201-5 Instrument Mechanics	0.22	0.14	0.23	0.21	0.23	0.25	0.17	0.12	0.10			
Bldg. 9201-4 Instrument Mechanics	-	-	0.17	0.15	0.20	0.15	0.07	0.10	0.16			
Maintenance Welders	0.12	0.06	0.23	0.21	0.34	0.38	0.25	0.21	0.23			
Maintenance Supervision	0.18	0.14	0.28	0.23	0.22	0.21	0.16	0.14	0.12			
	-	0.21	0.24	0.26	0.15	0.25	0.23	0.22	0.14			

Solvent Urine Sample Distribution by Concentration Range in mg/l

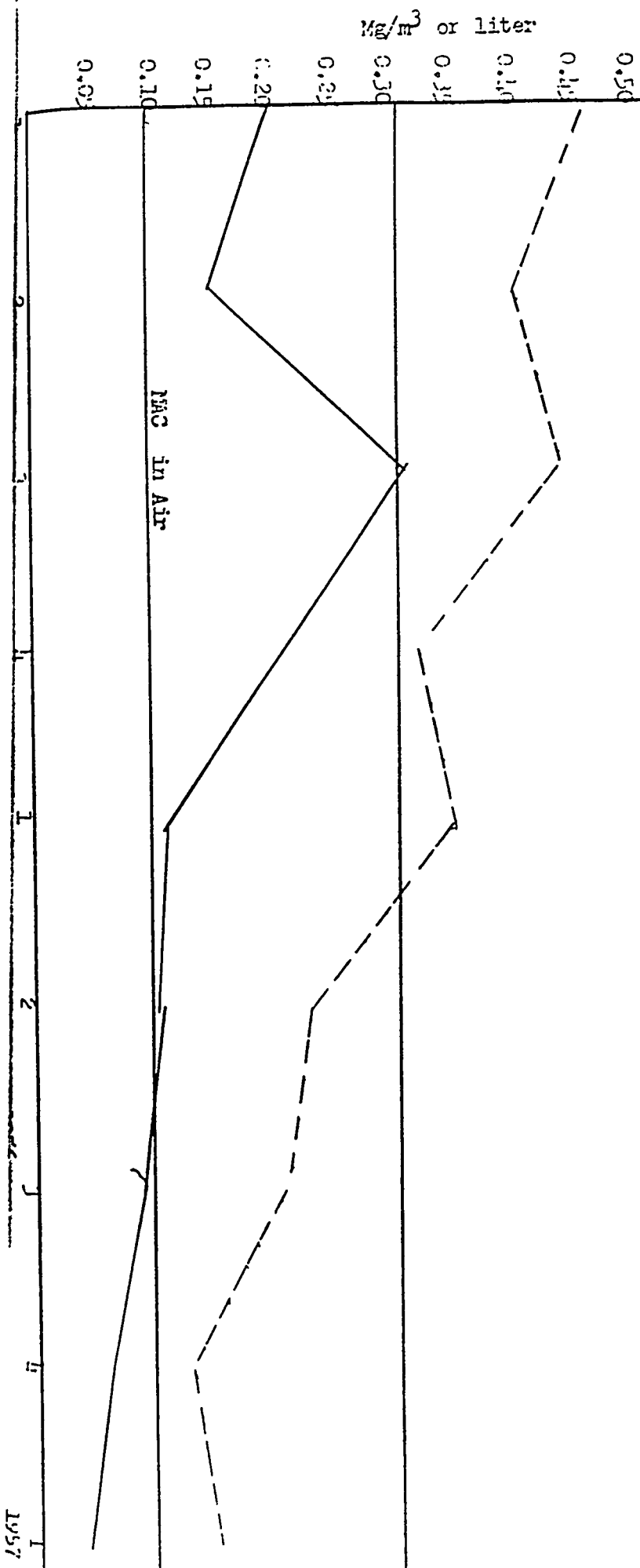
Solvent Urine Sample Distribution by Concentration Range in mg/L													Total % Sample
Quarter	# Samples	<u>% ≤ 0.10</u>	<u>% .10-.19</u>	<u>% .20-.29</u>	<u>% .30-.39</u>	<u>% .40-.49</u>	<u>% .50-.59</u>	<u>% .60-.69</u>	<u>% .70-.79</u>	<u>% .80-.89</u>	<u>% .90-.99</u>	<u>% ≥ 1.00</u>	<u>% Sample</u>
4th. '54	321	39.0	37.5	14.4	4.4	2.5	1.3	0.3	0.3	0.0	0.0	0.3	9.0
1st. '55	517	29.5	29.0	11.4	11.8	5.2	4.1	2.7	1.4	1.2	1.6	2.3	30.0
2nd.	988	38.0	23.5	15.0	8.0	5.0	3.1	2.3	2.2	0.5	0.8	1.8	21.0
3rd.	868	18.0	30.0	18.0	10.5	9.2	5.2	2.5	1.8	0.9	0.9	2.6	31.0
4th.	921	23.5	28.0	20.5	12.3	6.9	3.2	2.2	0.7	0.5	0.3	0.2	26.0
1st. '56	1923	27.5	27.0	15.0	11.3	8.0	4.5	1.9	1.1	1.0	1.0	1.4	30.0
2nd.	1937	27.5	27.8	17.6	11.5	6.7	3.9	2.4	0.8	0.8	0.5	1.5	27.0
3rd.	1304	38.0	30.7	15.5	9.1	3.3	1.8	0.7	0.2	0.2	0.2	0.3	15.8
4th.	1213	45.6	31.6	13.2	4.9	2.7	0.9	0.6	0.4	0.0	0.1	0.1	9.7
1st. '57	1104	59.8	25.4	8.3	3.7	1.5	0.7	0.2	0.1	0.2	0.1	0.0	6.5

— Ave. Air Concentration in building 9201-4 in mg/m³
 --- Ave. Urine Excretion for Process Operators in mg/l



— Average Air Concentration in mg/m³

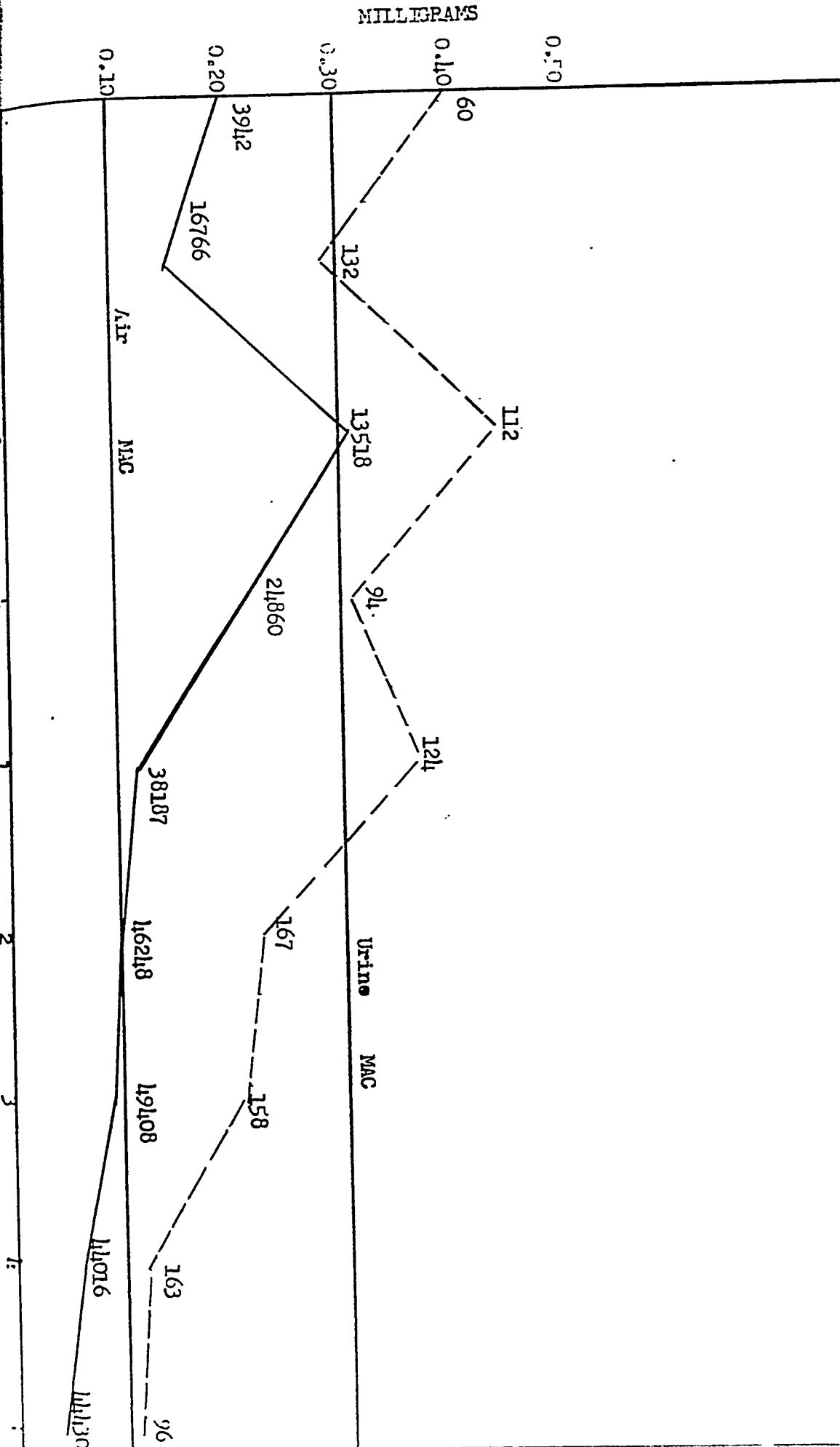
- - - Average urine excretion for Process Operators mg/l



Average Air and Urine Excretion - Building 2201-5 - Process Operators Only

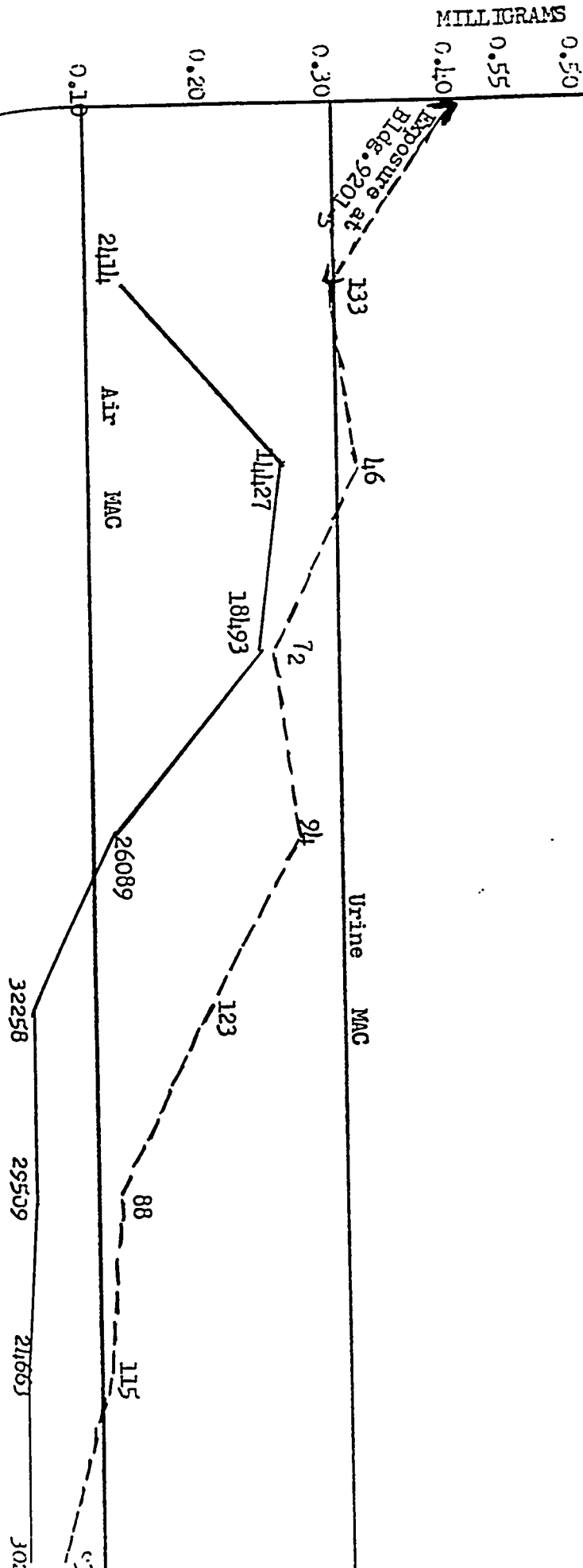
--- Ave. Air Concentration Bldg. 2201-5 mg/m³
 --- Ave. Urine Excretion Process Operators Only mg/l

**** Number above each point refer to total numbers of samples per quarter

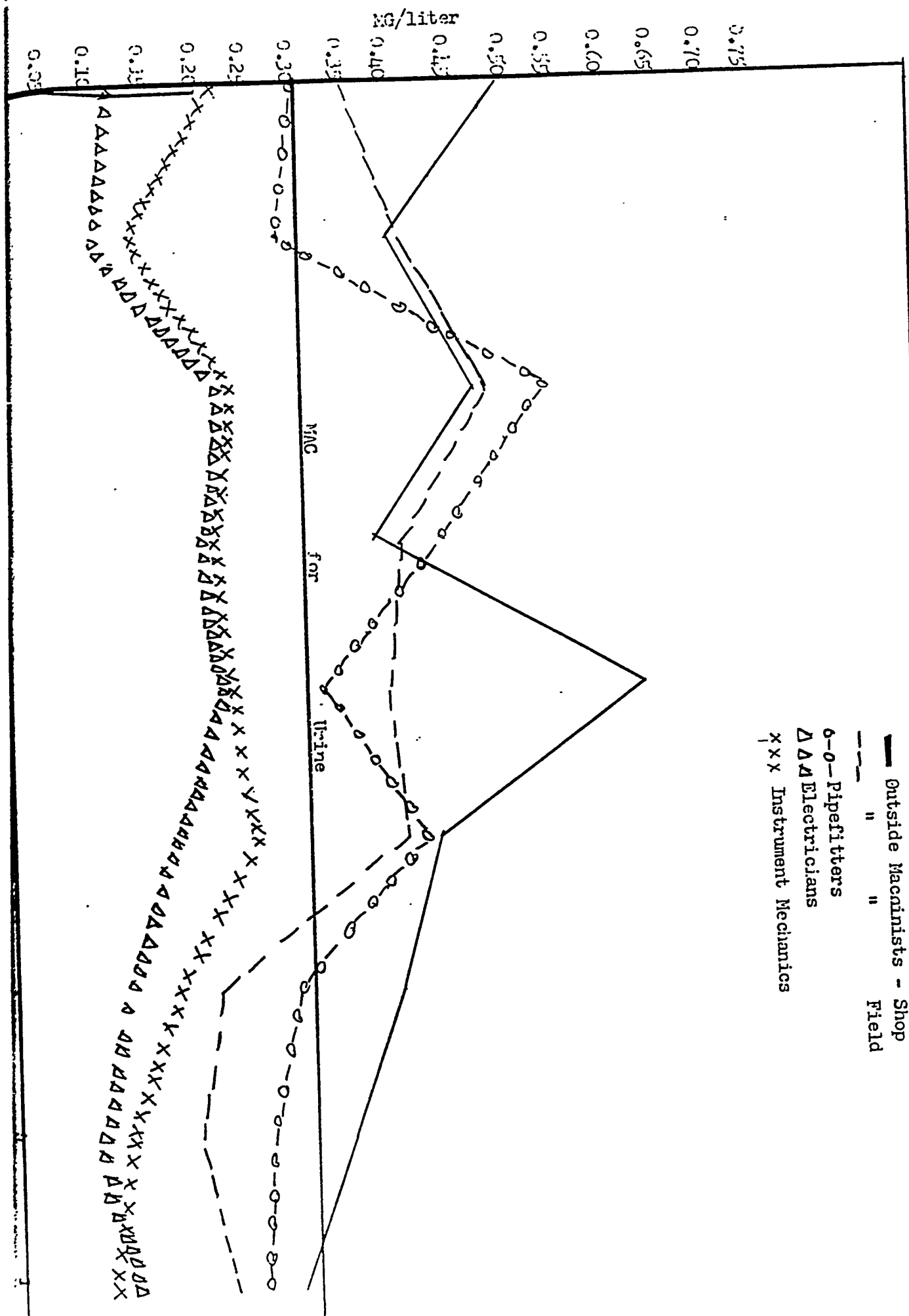


Average Air and Urine Excretion - Building 9201-4 - Process Operators Only

____ Ave. Air Concentration: Bldg. 9201-4 mg/m^3
 ----- Ave. Urine Excretion Process Operators Only mg/l
 ***** Numbers at each point refer to total number of samples per quarter.

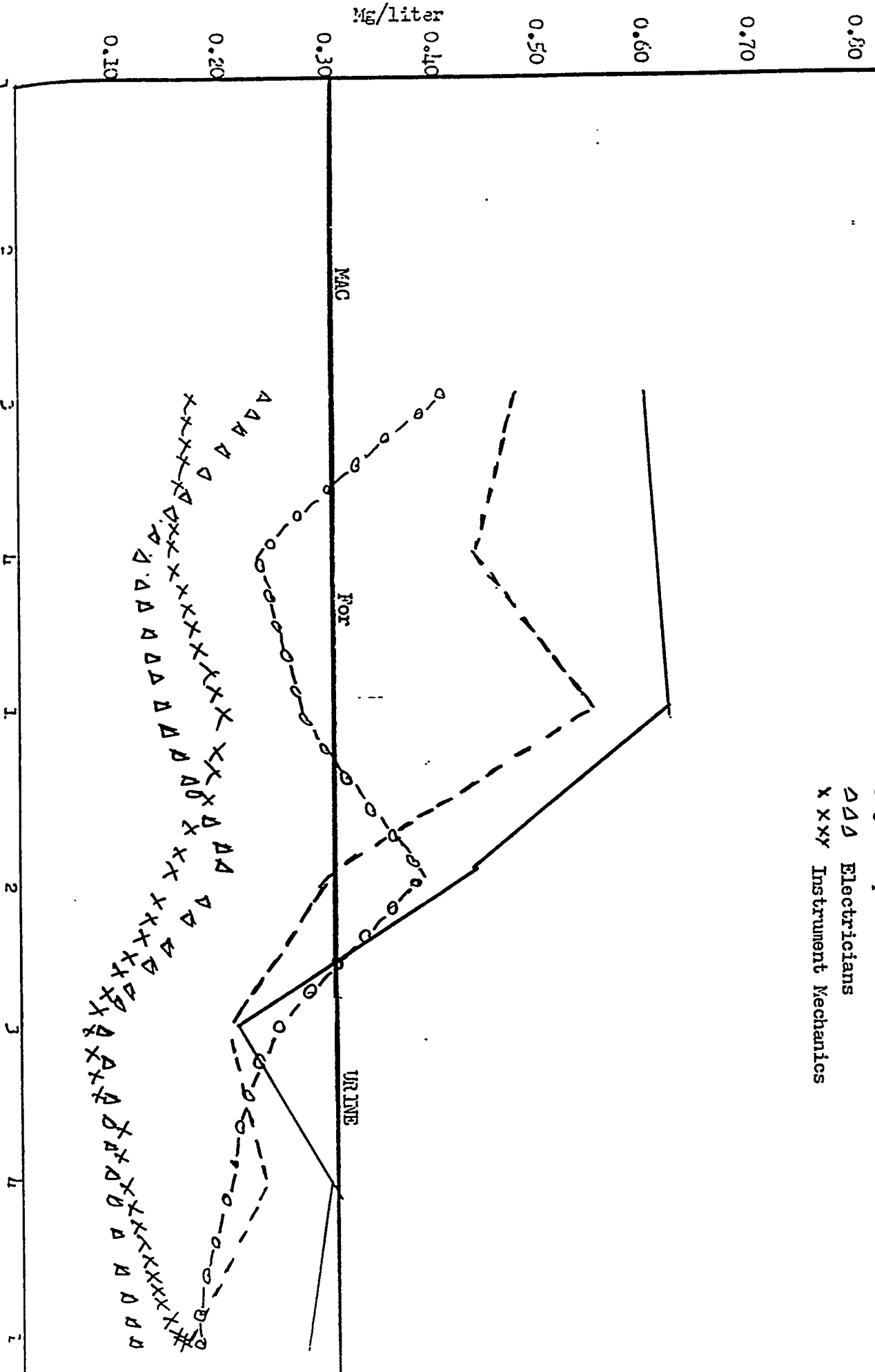


Average Urine Excretion Rates for Various Maintenance Crafts - Building 9001-5



Average Urine Excretion for Various Maintenance Crafts Building 3201-1

- Outside Machinists - Shop
- - - " " Field
- o-o- Pipefitters
- △△△ Electricians
- x x x x Instrument Mechanics



Shower Study

Urine excretion data on personnel exposed in mercury contaminated areas indicated a rather high absorption rate.

Since preliminary data, obtained on a few people, indicated that significant readings with a General Electric mercury vapor detector could be obtained on the skin of exposed personnel, an effort was made to see if showers after completion of a days work had any effect on reducing the urine excretion rate of mercury.

Groups of personnel from two different job classifications were requested to take a daily shower at the end of the work day.

These people contributed a urine sample on a weekly basis and average rates for the group were established monthly.

These rates were then compared with comparable job classifications with out benefit of daily shower and averaged on a monthly basis.

Data on another job classification with out showers but in two different work areas is also presented for comparison.

It is apparent from this data that no conclusive statement could be made as to the efficacy of showers in lowering the excretion rate. The descent in urine excretion was apparent in all groups regardless of showers. It would seem that this was more dependent on the lowering of the atmospheric air concentrations as was evidenced by air data during this particular six month period.

The groups of people are defined as follows:

Group A - Outside Machinists with showers

Group B - Outside Macnists without showers

Group C - Process Supervision with showers

Group D - Process Supervision without showers

Group E - Process Operators 9201-5 without showers

Group F - Process Operators 9112-1 without showers

All excretion rates are expressed in mg/liter.

Group	<u>January</u>		<u>February</u>		<u>March</u>		<u>April</u>		<u>May</u>		<u>June</u>	
	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>	<u>Number</u> <u>Samples</u>	<u>Average</u> <u>Excretion</u>
A	19	0.72	36	0.59	35	0.72	46	0.53	16	0.51	3	0.37
B	16	0.50	32	0.41	7	0.55	3	0.52	25	0.48	35	0.34
C	12	0.40	49	0.34	50	0.32	41	0.23	36	0.22	20	0.18
D	15	0.35	28	0.28	24	0.43	24	0.36	16	0.30	9	0.24
E	36	0.40	74	0.37	14	0.30	31	0.34	91	0.22	45	0.17
F	24	0.25	57	0.28	13	0.29	21	0.26	78	0.19	24	0.13

Detector Badge Study

A mercury vapor detector was developed by the Analytical Development group which could be used by personnel in the same manner as a radiation film badge. Experience with this type of monitoring is not complete and further investigation is indicated.

Filter paper, which has been treated with a one per cent solution of palladium - II chloride, if exposed to mercury vapor at room temperature becomes black since the palladium is reduced to the metallic state. The degree of darkening was found to be proportional to the atmospheric concentration.

The exposed badges are reacted with ammonia to clear the unreduced palladium II chloride, washed in water and read on a densitometer in comparison with blank paper. The density was then used to calculate the average concentration of mercury in milligrams per cubic meter.

These badges were used in an attempt to correlate urine excretion versus average exposure for weekly intervals. It was found, however, that only general correlation could be obtained. That is, the excretion value in milligrams per liter of urine increased in value as the indicated exposure increased. Since all personnel used in this study had at least one years previous exposure to mercury it was impossible to obtain data relating to dose absorption rate and excretion pattern. This device, however, did indicate certain types of work had average exposures much higher than average building or area concentrations predicated.

Excretion Studies on Personnel Removed from Mercury Exposure

Certain personnel whose excretion rates were in excess of 0.60 mg/l were removed from further exposure and followed on a weekly basis to see how long a time interval was necessary to clear mercury from the body.

This time relationship was dependent on the degree and duration of exposure.

For personnel whose exposure was 12-15 months at concentrations 2-7 times the MAC of 0.10 mg/m^3 the clearing time to reduce the excretion level below 0.30 mg/l was 3-6 months and about 9-12 months to get to a level of less than 0.10 mg/l .

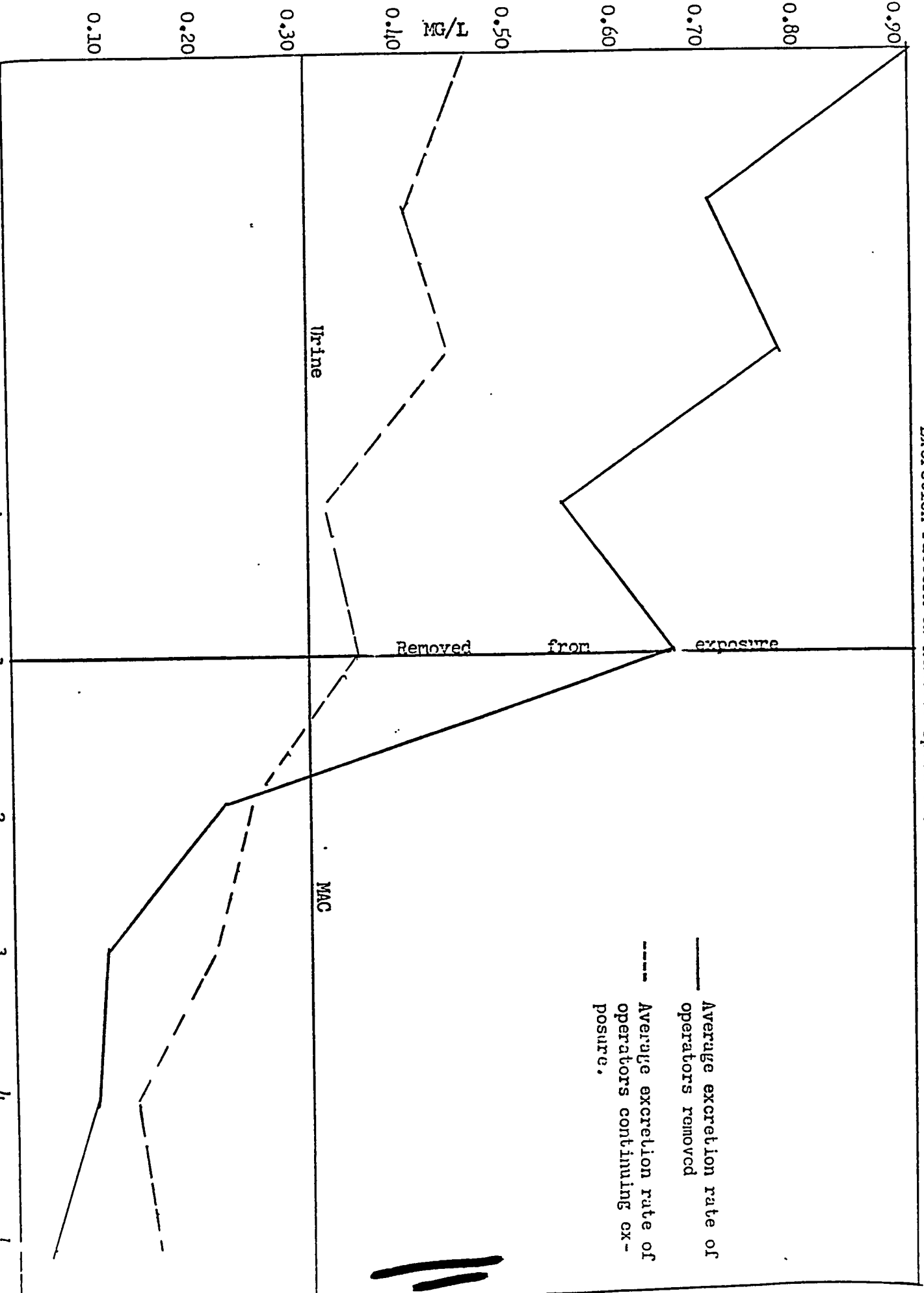
Summary and Conclusions

Tables and graphs are presented which show various average urine excretion levels in mg/liter for different occupational crafts over the past 27 months. Average air concentrations in mg/m^3 are presented for various areas along with a distribution pattern for various areas.

At this time the general air concentrations of mercury vapor are slightly less than one half the maximum allowable concentration of 0.10 mg/m^3 .

All groups of personnel are showing a downward trend in urine excretion levels. There are a few groups who are just barely below the 0.30 mg/l level of excretion and in all probability it will take another 6-9 months before these groups plateau at a lower level of urine excretion. Of these groups, the outside machinists are of most concern. Another group that falls outside the general pattern is the one composed of operators doing clean-up work in Building 9201-5. These personnel while on the one month of day cleaning have an excretion average at least twice that of the normal shift operators and in some cases even higher.

Excretion Pattern of Removed Operators



Y-F46-49
p. 29

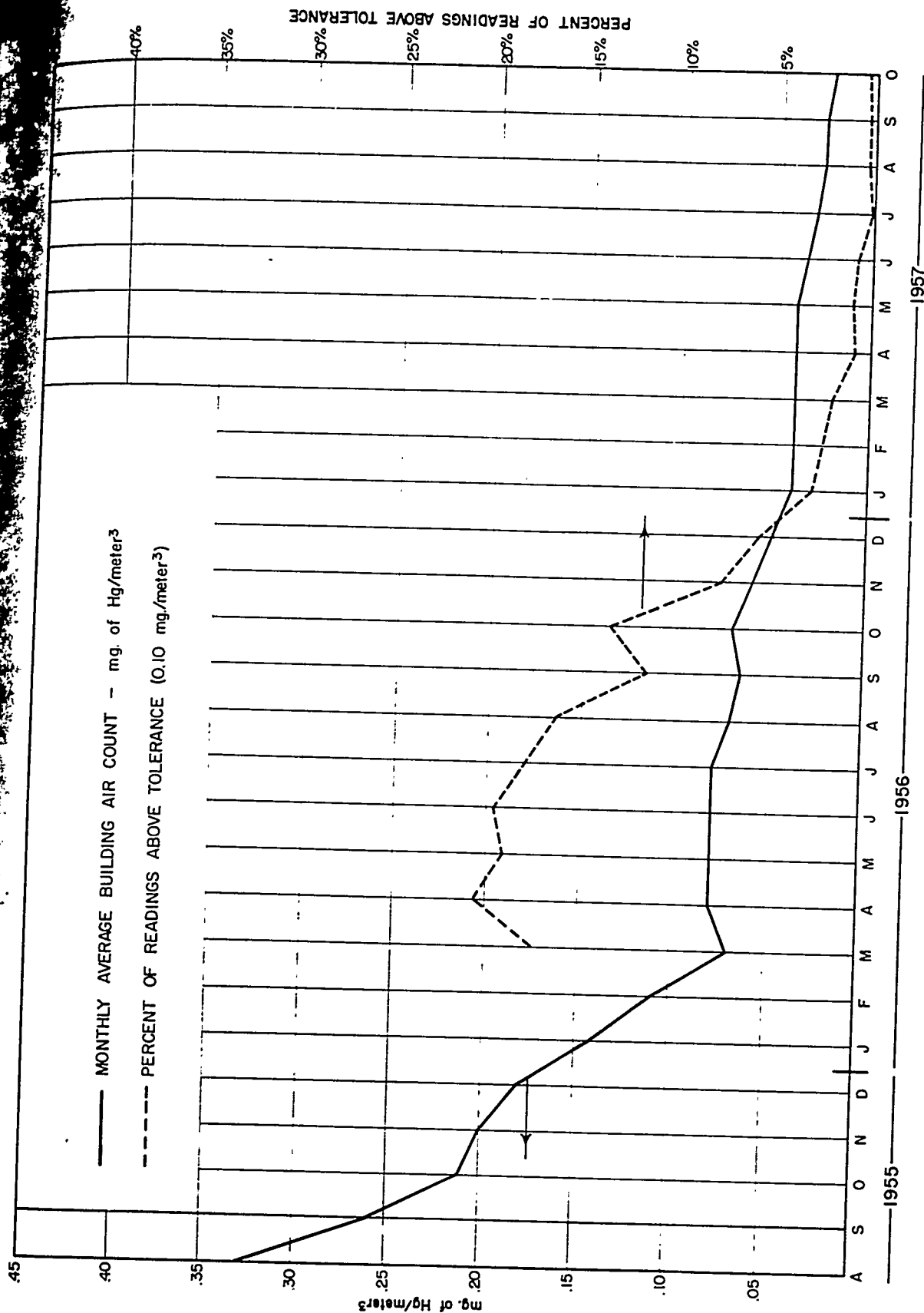


Figure 2. MERCURY AIR COUNT IN ALPHA-5

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VITAL RECORD

ITEM 101 Personnel Exposure to Solvent
Associated with the Disassembly and Repair
of Collex Equipment

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Personnel Exposure to Solvent Associated with the
Disassembly and Repair of Colex Equipment

The problem of personnel exposure to solvent, during disassembly and repair of Colex equipment, particularly pumps and circuit interrupters, is a complex one.

Generally speaking, average solvent vapor concentrations in the maintenance shop areas are not indicative of an individuals overall exposure. The average concentration in any area is determined by a number of samples taken in various locations. These do not include concentrated numbers restricted to a specific spot in any given area. In other words in the maintenance shops samples are taken at breathing level in all work locations and then an area average is determined. There may be specific points which have air concentrations above the maximum allowable concentration of 0.10 mg/m^3 while the average for the area may be below 0.10 mg/m^3 .

In the following tables the average air concentration is indicated for the maintenance areas in buildings 9201-5 and 9201-4 with some specific averages at the Pump wash and repair facilities. As indicated the average solvent vapor concentration has been below the MAC for the past nine months, ~~with the pump facilities being below the past three months in 9201-5 and the past five months in 9201-4.~~ However, this does not take into account the fact that concentrations well above the MAC are encountered for varying periods of time during specific disassembly and repair operations. In other words an individual worker, dependent on his job duties, may have greater exposure than another working in the same area. These acute exposures are difficult to assess in terms of integrated exposure and effect over long periods of time.

Building 9201-5
Average concentration of Solvent in mg/m³

	<u>Maint. Shop Area</u>	<u>Moyno Repair</u>	<u>Pump Repair</u>	<u>Pump Storage</u>
Jan. 1955	0.16			
Feb.	0.07			
March	0.11			
April	0.08			
May	0.14			
June	0.15			
July	0.11			
Aug.	0.12			
Sept.	0.11			
Oct.	0.14			
Nov.	0.26			
Dec.	0.16	0.21	0.19	0.19
Jan. 1956	0.17	0.23	0.17	0.17
Feb.	0.09			
March	0.07			
April	0.06			
May	0.07			
June	0.07			
July	0.07	0.12	0.13	0.07
Aug.	0.08	0.10	0.09	0.08
Sept.	0.07	0.07	0.08	0.07
Oct.	0.07	0.07	0.07	0.07
Nov.	0.06	0.07	0.08	0.06
Dec.				

Building 9201-4
Average concentration of Solvent in mg/m³

	<u>Maint. Shop Area</u>	<u>Pump Wash Area</u>	<u>Pump Repair Area</u>	<u>Circuit Repair Area</u>
July 1955	0.13			
Aug.	0.15			
Sept.	0.24			
Oct.	0.11			
Nov.	0.16			
Dec.	0.20	0.30	0.32	
Jan. 1956	0.17	0.26	0.21	
Feb.	0.18			
Mar.	0.09			
April	0.07			
May	0.07			
June	0.06			
July	0.06	0.06	0.06	0.09
Aug.	0.05	0.08	0.06	0.09
Sept.	0.04	0.06	0.04	0.06
Oct.	0.03	0.04	0.04	0.05
Nov.	0.04	0.06	0.07	0.04

The MAC of 0.10 mg/m³ is defined as the concentration which man may be exposed to for a 40 hour work week without expecting toxic effects. From limited information, using the integrated badge detector, it has been found that certain individuals doing disassembly and repair work may exceed this MAC by factors of five to twenty times.

incl Another way of gauging an individual's exposure is through the analysis of urine samples for the concentration of solvent. The arbitrary MAC for solvent in urine is 0.30 mg/liter, although it has been the practice not to institute action towards transfer of an individual's job duties unless his excretion rate is twice this figure. *omit* Another means used *is to check* ~~to transfer an individual is, if~~ his urine samples show the presence of albumin indicating possible kidney damage, he is transferred regardless of his solvent excretion level.

incl Since there is much individual susceptibility to solvent, the only general statement that can be made regarding solvent excretion, is that as the exposure increases so does the excretion rate. However, as the exposure decreases, there is a definite lag period before the urine excretion rate also shows signs of decreasing.

The data included in the following tables are indicative of group averages as well as some of the individual variations encountered.

A summary of this tabular data indicates the following:

1. Group averages show a tendency to decrease at the present time.
2. Certain specific groups tend to remain at essentially a constant level above 0.30 mg/l.
3. Groups upon removal from exposure are not at a zero excretion level even after 6 months of no exposure.

4. Individual differences in excretion rate after exposure in the same job classification tend to vary considerably.
5. Since the average air concentrations have been below the MAC for the past 9 months it is only during the past 3 months that a significant decrease in urine excretion has been noted.

Average Excretion Rate mg/liter

	<u>1955</u>				<u>1956</u>		
	<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>	<u>4th. Q.</u>	<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>
Group A*	0.47	0.69	0.33	0.35	0.49	0.29	0.20
Group B*	0.15	0.15	0.38	0.30	0.26	0.48	0.49
Group C*	0.27	0.22	0.35	0.35	0.27	0.27	0.22
Group D*	-	0.19	0.70	0.32	0.92	0.34	0.07
Group E*	0.60	0.75	0.75	0.51	0.86	0.48	0.11
Group F*	0.20	0.22	0.33	0.29	0.24	0.29	0.18

* Group A consists of 3 people employed in the pump area since 1-1-55 to the present.

Group B consists of 12 people employed in the pump area from 1-9 months in 1956.

Group C consists of 15 people of the same job classification but not working in the pump shop area.

Group D consists of 3 people employed in the pump area from 1-1-55 and removed from further exposure on 5-7-56

Group E consists of 7 people employed in the pump area from 6-1-55 and removed from further exposure on 5-7-56.

Group F - This group consists of all employees assigned to Process maintenance in buildings 9201-4 and 9201-5.

Three employees who have been assigned to pump repair since January 1, 1955 to present:

<u>Average excretion rate in mg/liter</u>						
<u>1955</u>				<u>1956</u>		
<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>	<u>4th. Q.</u>	<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>
0.90	1.24	0.45	-	0.37	0.32	0.07
0.14	0.29	-	0.33	0.55	0.38	0.34
0.40	0.54	0.16	0.38	0.55	0.18	0.19

Twelve employees currently assigned to pump repair whose exposure in this area started at various times in 1956.

<u>Average excretion rate in mg/liter</u>		
<u>1956</u>		
<u>1st. Quarter</u>	<u>2nd. Quarter</u>	<u>3rd. Quarter</u>
0.05	-	0.41 started work 2-6-56
0.24	0.44	0.39 " " 8-20-56
-	0.39	0.37 " " 5-7-56
0.07	0.12	0.13 " " 8-20-56
0.49	0.75	0.49 " " 2-6-56
0.11	0.40	1.42 " " 6-1-56
0.30	-	1.07 " " 8-20-56
0.28	0.70	0.85 " " 6-1-56
-	-	0.21 " " 6-25-56
0.56	-	0.15 " " 10-1-56
0.26	0.19	0.40 " " 6-1-56
0.26	-	0.11 " " 6-1-56
-	0.87	0.36 " " 6-1-56

Fifteen employees of same job classification but not working in pump shop area.

<u>Average excretion rate in mg/liter</u>						
<u>1955</u>				<u>1956</u>		
<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>	<u>4th. Q.</u>	<u>1st. Q.</u>	<u>2nd. Q.</u>	<u>3rd. Q.</u>
-	0.0	0.13	0.38	0.17	0.25	0.15
-	-	-	-	-	0.08	0.12
-	-	-	0.31	0.17	0.33	0.16
-	0.26	0.15	0.07	0.38	0.51	0.41
-	0.20	0.09	0.28	0.19	0.25	0.31
0.03	-	0.22	0.18	0.09	0.23	0.34
-	0.03	-	-	0.25	0.24	0.10
0.41	0.01	0.36	0.34	0.39	0.28	0.14
0.36	0.20	-	-	0.45	-	0.10
-	0.03	-	-	0.09	0.23	0.13
0.29	0.75	1.07	0.82	-	-	0.32
-	-	-	-	-	0.10	0.18
-	-	-	-	-	0.13	0.26
0.26	0.50	0.56	-	0.45	0.62	0.29
-	-	0.24	0.39	0.30	-	0.30

Three employees employed in the pump area since Jan. 1, 1955 and removed from jobs on May 7, 1956.

Average excretion - mg/liter

<u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>
-	0.24	0.62	0.12	1.03	0.82	1.05	0.47	0.62					
-	0.14	0.79	0.29		0.85			0.28	0.19	0.31			
-	-	-	0.26	1.60	0.63	0.90	0.78	0.71	0.15	0.10	0.07	0.07	

Seven employees employed in the pump area from June 1, 1955 and removed May 7, 1956.

Average excretion rate mg/liter

<u>1955</u>				<u>1956</u>									
<u>1st.Q.</u>	<u>2nd.Q.</u>	<u>3rd.Q.</u>	<u>4th.Q.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>
0.44	1.38	0.91	0.52	1.32	0.83			0.27	0.14	0.17	0.09	0.08	0.06
0.12	-	-	-	0.82	1.08	0.76	0.79						
1.28	1.20	0.97	-	-	-	-	-	0.27	0.19	0.12	0.06	0.06	0.0
0.22	0.49	0.12	0.50	0.94				0.27	0.28	0.20	0.10	0.11	0.08
-	-	0.74	-	-	-	1.25		0.73	0.57	0.34	0.16	0.10	0.08
0.59	0.43	-	-	0.48	0.45	0.54	0.99	0.55	0.37	0.23	0.17	0.10	0.11
0.92	0.26	-	-	0.80	0.74	1.15	0.92	0.50	0.34	0.30	0.29	0.17	0.14

3rd. Quarter 1956 Group Excretion averages for various
maintenance job classifications

Excretion Rate in mg/liter

<u>Job</u>	<u>Process Maintenance</u>		<u>Combined Ave.</u>	<u>Alterations Maintenance</u>
	<u>Bldg. 9201-5</u>	<u>Bldg. 9201-4</u>		
Supervisory	0.15	0.12	0.14	0.21
Outside Machinist	0.29	0.20	0.25	0.17
Pipefitter	0.22	0.20	0.22	0.30
Electrician	0.06	0.08	0.08	
Instrument Mech.	0.17	0.07	0.13	
Welder	0.34	0.13	0.23	0.24

3rd. Quarter 1956 Group averages for various Pro-
duction job classifications

<u>Job.</u>	<u>Bldg. 9201-5</u>	<u>Bldg. 9201-4</u>	<u>Combined Ave.</u>
Process Supervisors	0.21	0.13	0.18
Process Operator	0.21	0.12	0.18
Window & Wall Washers	0.26	0.31	0.26
Auxillary Operator	0.14	0.11	0.12

There have been twenty people whose job duties were changed from the pump repair area. Four of these occurred in June 1955, three of four showed albuminuria and one was removed for other reasons.

In May 1956 there were eleven transferred because of a high solvent excretion rate. Since May 1956 there have been five more transfers, one in June and two each in August and October for reasons of a high solvent excretion rate.

Q. M.
Of the people presently assigned to the pump repair area 65% have excretion rates greater than 0.30 mg/liter with 18% of these in excess of 0.60 mg/liter.

Q. M.
Of the people in the same job classification but not assigned to pump repair, 33% have excretion rates greater than 0.30 mg/liter, but none of these exceed 0.60 mg/liter.

Personnel Exposure to Solvent Associated with the
Disassembly and Repair of Colox Equipment

The problem of personnel exposure to solvent during disassembly and repair of Colox equipment, particularly pumps and circuit interrupters, is a complex one.

Generally speaking, average solvent vapor concentrations in the maintenance shop areas are not indicative of an individual's overall exposure.

The average solvent vapor concentration has been below the MAC for the past nine months. However, this does not take into account the fact that concentrations well above the MAC are encountered for varying periods of time during specific disassembly and repair operations. In other words an individual worker, dependent on his job duties, may have greater exposure than another working in the same area. These acute exposures are difficult to assess in terms of integrated exposure and effect over long periods of time.

The MAC of 0.10 mg/m^3 is defined as the concentration which man may be exposed to for a 40 hour work week without expecting toxic effects. From limited information, using the integrated badge detector, it has been found that certain individuals doing disassembly and repair work may exceed this MAC by factors of five to twenty times.

Another way of gauging an individual's exposure is through the analysis of urine samples for the concentration of solvent. The arbitrary MAC for solvent in urine is 0.30 mg/liter . Another means used is to check urine samples for the presence of albumin indicating possible kidney damage.

Since there is much individual susceptibility to solvent, the only general statement that can be made regarding solvent excretion, is that as the exposure increases so does the excretion rate. However, as the exposure decreases, there is a definite lag period before the urine excretion rate also shows signs of decreasing.

A summary of data indicates the following:

1. Group averages show a tendency to decrease at the present time.
2. Certain specific groups tend to remain at essentially a constant level above 0.30 mg/l.
3. Groups upon removal from exposure are not at a zero excretion level even after 6 months of no exposure.

There have been twenty outside machinists whose job duties were changed from the pump repair area. Four of these occurred in June 1955, three of four showed albuminuria and one was removed for other reasons.

In May 1956 there were eleven transferred because of a high solvent excretion rate. Since May 1956 there have been five more transfers, one in June and two each in August and October for reason of a high solvent excretion rate.

Of the outside machinists presently assigned to the pump repair area 65% have excretion rates greater than 0.30 mg/liter with 18% of these in excess of 0.60 mg/liter.

Of the outside machinists not assigned to pump repair 33% have excretion rates greater than 0.30 mg/liter, but none of these exceed 0.60 mg/liter.

Solvent Air Analyses

The seriousness of the solvent contamination problem which exists in the Colex equipment disassembly and repair area may be shown by the following data prepared by the Industrial Hygienist of the Y-12 Medical Department:

1. A comparison of the solvent vapor sample findings for the past ____ months in the equipment repair areas with similar findings in other areas in the Colex plants. (Include building average also)

e.g.

<u>Area, 9201-4</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>
Equipt. Repair Area							
Absorber Areas (Avg)							
Cascades 1st level (Avg)							
Etc., Bldg. (Avg)							

<u>Area, 9201-5</u>
Equipt. Repair Area
Absorber Areas (Avg)
Cascades 1st level (Avg)
Etc., Bldg. (Avg)

2. Columnar graph of above data indicating level of the MAC of 0.10 mg/m^3 .

(What contamination level do we expect to achieve?) — *La France* ?
Ship area - reduce to 1/2 present
* MAC - (Define) *new area - reduce possible acute effects of exp.*

Urinalysis Data

Evidence of the effects on personnel of the above conditions is given in the following data:

1. A comparison of the results of urinalysis checks on personnel assigned to work in the equipment disassembly and repair areas with those of men in similar crafts working in the more adequately ventilated areas.

Name Work Assignment Apr. May June July Aug. Sept. Oct.

Pump Repair Shop

Cascade Maint.

(We don't want names
or badge numbers -
simply indication of
different individuals)

2. If comparative studies of different groups (including men assigned to equipment repair area - as one group) have been made, they should be significant.

• Define urinalysis terms and units.

Due to high solvent counts in urinalysis checks, it has been necessary during the past _____ months to transfer _____ repairmen from the equipment disassembly and repair areas to work in non-solvent areas. At the present time there are _____ maintenance personnel who are restricted from working in this repair area because of the solvent contamination problem. The number restricted represents _____ % of the maintenance personnel with the skills for this work.

all
130
55-60

INTER-COMPANY CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation

To: Mr. J. W. Ebert
Building 9704-2

Plant: November 19, 1956

Date:

Copies To: Mr. D. P. Anderson
(No Y-12 RC)

Subject: Outside Machinist Working in
Pump Shop Area - Past and Present

Listed below are Outside Machinist presently working in the pump shop area.

<u>Badge No.</u>	<u>Name</u>	<u>Area Working</u>	<u>Building</u>
		Circuit Interrupters	9201-5
		Circuit Interrupters	9201-5
		Circuit Interrupters	9201-4
		Circuit Interrupters	9201-4
		Circuit Interrupters	9201-4 (part time)
		Kinney Pumps	9201-5
		Kinney Pumps	9201-5
		Kinney Pumps	9201-5
		Kinney Pumps	9201-5
		Kinney Pumps	9201-5
		Moyno pumps & Misc work	9201-5
		" " " "	9201-5
		" " " "	9201-5
		" " " "	9201-5
		Moyno pumps	9201-4
		Moyno pumps	9201-4
		Moyno pumps	9201-4 (part time)

Outside Machinist that have worked in pump shop area that were moved out of building because of count.

Yarnie

/db

1. 凡在本行开立存款账户的客户，均可向本行申请开立支票。
 2. 支票的有效期为自签发之日起 10 个工作日内。
 3. 支票的金额不得超过账户余额。
 4. 支票的签发人必须是账户持有人或其授权代理人。
 5. 支票的收款人必须是本行开户的客户。
 6. 支票的用途必须合法。
 7. 支票的签发必须符合国家的法律法规。
 8. 支票的签发必须符合本行的规章制度。
 9. 支票的签发必须符合本行的风险控制要求。
 10. 支票的签发必须符合本行的风险管理要求。

UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation

Mr. J. I. Ebert
Building; 3704-2

Plant: November 19, 1958

Mr. D. F. Anderson
(No Y-12 RC)

Subject: Outside Machinist Working in
Pump Shop Area - Past and Present

Listed below are Outside Machinist presently working in the pump shop are:

Dr. J. H. Mc. J. H. Mc.

Area Working on Building

Circuit Interrupters	9201-5	2-6-56
Circuit Interrupters	9201-5	8-20-56
Circuit Interrupters	9201-5	5-7-56
Circuit Interrupters	9201-4	8-20-56
Circuit Interrupters	9201-4	(part time)
Kinney Pumps	9201-5	1-1-55
Kinney Pumps	9201-5	1-1-55
Kinney Pumps	9201-5	1-1-55
Kinney Pumps	9201-5	2-6-56
Kinney Pumps	9201-5	6-7-56
Moyno pumps	9201-5	8-20-56
"	9201-5	6-7-56
"	9201-5	6-25-56
"	9201-5	10-7-56
Moyno pumps	9201-4	6-1-56
Moyno pumps	9201-4	6-1-56
Moyno pumps	9201-4	(part time)

Outside Machinist that have worked in pump shop area that were moved out of building because of scmt.

In
2090 1-3-55
2090 6-1-55
1-1-55
6-6-55
2090 -6-1-55
2090 1-1-55
2090 1-1-55
2090 -6-1-55
1-1-55
2090 1-3-55
2090 1-1-55
1-1-55

Out		In
8-20-56		1-1-55
5-7-56		1-1-55
5-7-56		1-1-55
5-7-56		1-1-55
5-7-56		1-1-55
7-7-56		1-1-55
5-7-56		1-1-55
5-7-56		1-1-55
16-6-55		1-1-55
8-20-56		1-1-55
0-1-56		1-1-55
1-1-56		1-1-55

Employees in same classification but not working in pump shop area.

Radio No.

Name

Radio No.

Name

/db

C. E. Newman

Done.

PROGRESS REPORTS PREVIOUSLY ISSUED

<u>Jack got copy</u>			<u>M No.</u>	<u>Date</u>			
✓	rad only	Y-40	M-448	Sept 1947	X	Y-300 PCE	Nov. '48
✓	"	Y-57	M-450	Oct 47	X	Y-318 Ctet	Dec '48
✓	"	Y-76	M-449	Nov 47	X	Y-339 M-453 Part IV = I.H.	See if these are J. Jan '49 Y/HG 0136
✓	"	Y-94	none	Dec 47	X	Y-365 No Hg	Feb. '49
✓	"	Y-120	none	Jan 48	X	Y-385 "	March '49
✓	"	Y-134	--	Feb 48	X	Y-402 Cd	Apr '49
✓	⊗	Y-181	--	May 48	X	Y-429 M-493 Hg vapor detector on order	Y/HG # (0197) May 49
—	Chemical Div. Progress Report	Y-119	--	Jan 48	X	Y-780 ?	(0068)
		Y-119 (Appendix) ?			X	Y-836 (4/51 - 4/51) I.H. section	
✓	⊗	Y-215	--	July 1948	✓	Y-858 ?	(0069)
✓		Y-237	--	Aug 48	✓	Y-940	(0198)
✓		Y-259	--	Sept 48	✓	Y-1066	(0054)
✓	benzene, TCE in air (varnishing) (chip cleaning)	Y-280	--	Oct 48	✓	Y-1070	(0135)
					✓	(Y-1074)	—

This one

- ⊗ 1st report to be called Health Physics - Industrial Hygiene Progress Report
- Chemical Div. - analytical, using U, BeO
- # "Part III - Industrial Hygiene"
- Δ 1st mention of preparation for measuring Hg in air

Health Physics Reports

in pile's office

Date	M	Y/HG-	Y	Bldg. Air Hg	EFPC Hg	Misc. Hg
1-49	453	0136	339	area avg's	—	—
5-49	493	0197	429	no. > MAC hi, lo, mean, median	—	—
1/50-12/50	494	0068	780%	no. > std.	—	—
1/51-12/51	495	0069	836	no. > MPL min, max, avg.	—	—
1/52-7/52	496	0198	940	no. > MPL	—	—
7/52-12/52	497	0054	1066	no. > MPL	—	—
1/53-6/53	498	0135	1070	no. > MPL	—	—
7/53-12/53	499	Y-1074/IR (R.I.)	1074	35% > MPL	0.57 mg/l 2/1.28	B-4 stack avg. .05 mg/m ³ 8.6 lb/d lost

Air Bldgs.

UNCLASSIFIED

YHG-136

Index No. Y-339

This document contains 34 pages.

APPROVED FOR PUBLIC RELEASE

AtL 4/7/54
Technical Information Office Date

CARBIDE AND CARBON CHEMICALS CORPORATION

Y-12 Plant

W-7405-Eng-26

HEALTH PHYSICS - HYGIENE PROGRESS REPORT

January 1 - 31, 1949

UNCLASSIFIED

CLASSIFICATION CHANGED TO

BY AUTHORITY OF *22 D-1116*

5-15-56

BY *4-12 Central files* DATE *6-18-56*

E. G. Struxness

UNCLASSIFIED

Derivative Classifier *R. Mc Gill, Consultant*
(Name and title)

Oak Ridge, Tennessee
February 14, 1949

JAN 23 1990

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This document contains information affecting the National Defense of the United States. Its transmission or the disclosure of its contents in any manner to an unauthorized person is prohibited and may result in severe criminal penalties under applicable Federal laws.

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2. Beta, Gamma Hand & Foot Counts, Bldg. 9212, C-1 Wing¹Totals, January 1 - 31, 1949

Total Left Hand Counts	4564
Total Right Hand Counts	4564
Total Foot Counts	1141
Total Left Hand Above-tolerance Counts	112
Total Right Hand Above-tolerance Counts	105
Total Foot Above-tolerance Counts	17

3. Personnel Meters

A total of one hundred (100) film badges worn by personnel in the Assay Laboratories, Radiography Shop, Spectrograph Laboratory and "Metal" Machine Shops were processed during the period. The total number of pen chamber readings recorded was 1,100. None showed evidence of exposure in excess of 50 mr per day.

Part III - Instrumentation and CalibrationA. Instrumentation

The following instruments were obtained during January:

Two Cutie Pies
Three "Tornado" Air Samplers
One Victoreen Proteximeter
One Densichron Densitometer
One Keleket I. C. Alpha Scaler*
Five 10 r Keloket Pocket Chambers*

*On field test from AEC Instruments Branch.

B. Calibration Shack

Plans for the calibration shack are being drawn up. Present plans call for a well fifteen (15) feet deep for a 150-200 curie cobalt source for calibrating survey meters. A 25 mg source of radium will be used to calibrate personnel meters.

Part IV - Industrial HygieneA. General

Two additional substances, mercury and beryllium, were included in site surveys during January. The beryllium results, being incomplete, are not included in this report. They will, however, be included in the February Progress Report. A General Electric Mercury Vapor Detector was borrowed from the K-25 Industrial Hygiene Laboratory for use in determining Hg measurements.

¹times when personnel leave the work area for lunch and/or when they leave the plant at the end of the work day. Operating procedures provide, with certainty, for adequate decontamination before personnel are permitted to leave. Many hand counts are therefore not recorded.

2. Benzene (Cont'd.)

<u>Bldg.</u>	<u>Room</u>	<u>Conditions</u>	<u>ppm</u>
9737	L.V. Shop	General air--SE area of room	30
		General air--N central area, approx. 2 min. after dip tank closed	30
		General air--Between tank and drying oven	30
		Breathing zone--In front of closed dip tank	20

3. Carbon Monoxide (M.A.C. - 100 ppm)

<u>Bldg.</u>	<u>Room</u>	<u>Conditions</u>	<u>ppm</u>
9738	Foundry	General air--Melting badges in furnace	0

4. Carbon Tetrachloride (M.A.C. - 100 ppm)

<u>Bldg.</u>	<u>Room</u>	<u>Conditions</u>	<u>ppm</u>
9709	Sheet Metal Shop	Breathing zone--at open tank	32

5. Mercury (M.A.C. - 0.1 mg/m³)

<u>Bldg.</u>	<u>Room</u>	<u>Conditions</u>	<u>mg/m³</u>
9206	Sub-store	General air--near former mercury spills	0
		Breathing zone--at same location	0
		Work level--at shelving	0
9706-2	Lab.	General air--at site of former spills	0
9720-5	Vault	General air--at dirty mercury storage area	0
		Breathing zone--near storage containers	0
		Work level--at storage containers	0
9733-3	1	Floor level--1/8" above former spills	0.6
		General air--former mercury cleaning station	0
		Breathing zone--at N hood over muffles	0
		Work level--1" above table, under muffles	0.1
		Breathing zone--at hood over screening table	0
		Floor level--1" above N center floor drain	1.2
		Work level--In low ss sink formerly used	0
		Floor level--1" above S center floor drain	0.4
		General air--S center of room	0
		General air--entrance room, door closed, vent. off	0.05
		General air--cleaning room, door closed, vent. off	0.06
9737	McLeod Gauge Shop	General air--calibration room, door closed, vent. off	0.07
		General air--same room, fan on for 5 min.	0.03
		Breathing zone--same room, in hood	<0.03
		Breathing zone--cleaning room, in hood	<0.03
		Breathing zone--at final assembly bench	0.07
		General air--entrance room, in original position	0.07
		General air--door open, fresh air coming in	0.03
		General air--in mercury storage room	0.03

SECRET

Y/49-0197

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Index No. Y-429

This document contains 10 pages.

This is copy 2 of 15, Series A

CARBIDE AND CARBON CHEMICALS CORPORATION

Y-12 PLANT

W-7405-eng-26

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CLASSIFICATION CHANGED TO

BY AUTHORITY OF

(S-15-36)

BY *1/12 Central File*

DATE 6-18-56

HEALTH PHYSICS - HYGIENE PROGRESS REPORT

May 1 - 31, 1949

E. G. Strumess

CAUTION

This document contains information affecting the
National Defense of the United States within the
meaning of the Espionage Laws, Title 18, U.S.C.
and may result in severe criminal penalties under
applicable Federal laws.

Oak Ridge, Tennessee
June 27, 1949

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Fifty-seven neutron badges were worn by personnel in Bldg. 9204-3. None of these gave indications of exposure in excess of 50 mrep per week. (Eight hour day, five day week.)

3. Neutron Film Monitoring

A procedure is being set up to monitor neutrons using Eastman "K" film and neutron shields. This work is based on work done at the University of Rochester by G. Dessaner and E. Lennox. A polonium-beryllium neutron source on loan from K-25 is at present being used for calibration of the films. It is planned to have a small neutron source permanently available to this department for calibration purposes when the Instrument Testing Station is completed.

Part III - Instrumentation and Calibration

A. Instruments on Order

One (1) Chang and Eng Fast Neutron Monitor
 One (1) Kelley-Koett Alpha-Beta-Gamma Electroscope
 Two (2) Kelley-Koett Alpha Counter Scaler with Parallel Plate Counter and Amplifier

Part IV - Industrial Hygiene

A. General

The M.S.A. Benzol Indicator is still in the shop. A G.E. Electronic Hg Vapor Detector is on order.

Analytical methods for cyanides is still in the process of development.

B. Surveys

1. Site Surveys

A total of 145 samples were taken of air-borne contaminants. Table II shows the locations, process operation, protective measures and range of measured concentrations obtained in these samples.

Out of 145 samples 28 were found to be above tolerance. The following is a breakdown of the above tolerance samples:

<u>Contaminant</u>	<u>Building</u>	<u>No. of Samples Above M.A.C.</u>	
Beryllium	9731	6*	
		<u>Gen. Air or Breath.</u>	<u>Work or Source Level**</u>
Mercury Vapor	9203	2	5
	9211		1
	9720-5		2
	9731	1	2
	9733-3		3
	9737	2	4

*, ** (See footnotes on following

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8.

C. Urinanalyses

Number of Industrial Hygiene checks	22
Number of uranium determinations	39
Number of AAM/Creatinine for calibration	76
Total number of separate analysis performed in the laboratory	284
Number of uranium analysis showing greater than .0100 ppm	2

jwo

Edw. G. Struxness
Edw. G. Struxness

*Based on "less than" results as determined on 1/100 aliquots. Samples are being rerun "in toto" and it is anticipated that much lower values will be obtained.

**These samples invariably were taken in remote or otherwise inaccessible, or locally ventilated locations.

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TABLE 11. INDUSTRIAL HYGIENE AIR SAMPLING RESULTS

May 1 - 31, 1949

Contaminant and Mearling Allomble Comp.	Building	Room	Type of Sample and Process Operation	Protective Measures	Number of Samples	Probable Air-Borne Concentrations				Remarks
						Highest	Lowest	Median	Mean	
Ammonia M.A.C. - 100 ppm	9206	22	General Air and Breathing zones-Preprecipitation and filtration	Good General and Excellent Local Exhaust	5	47	0	47	36	
		23	General Air-Open storage	General Exhaust	1	4	--	--	--	
		25	General Air and Breathing zones-Preprecipitation and filtration	General and Local Exhaust	3	22	0	9	10	
		26	General Air-Open storage	General Exhaust	1	0	--	--	--	
		34	General and Breathing Zones-During preprecipitation	Good General and Local Exhaust	4	65	62	66	67	
	9212	6	General Air-Distillation	Good Local Exhaust	1	60	--	--	--	
		12	General Air-laboratory work	Good General Exhaust	1	60	--	--	--	
		40-B	General Air and Breathing Zones-During preprecipitation	Excellent General and Good Local Exhaust	3	66	0	66	40	
Beryllium M.A.C. - None Established	9731	18X	General Air and Breathing Zones-Processing M	Good General Exhaust-Does make worn	5	<1.3	<1.5	<1.3	<1.3 (Mg/m ³)	
Hydrogen Sulfide M.A.C. - 20 ppm	9926	Outside Inside	Source sample taken at aspirator basin General Air and Breathing Zones-During preprecipitation	None needed Closed system	1 7	>200 6	-- 0	-- 4	-- 3	
Mercury Vapor M.A.C. - 0.1 Mg/m ³	9205	22	General Air, Breathing and Potential Source Zones-At analytical instruments	Good General Exhaust	3	0	0	0	0	
		19	General Air-laboratory work Breathing Zone Work level-Beneath tables Source Zones-Above floor drains	Good General Exhaust Good General Exhaust Good General Exhaust Good General Exhaust	8 2 1 3	7.14 0.36 0.06 1.6	0 0.02 -- 0.08	-- -- -- 3.6	0.06 Prior to 0.18 clean up of mercury 0.76 spilled on floor.	
			General Air Breathing Zone Work level Source Zone	Good General Exhaust Good General Exhaust Good General Exhaust Good General Exhaust	9 6 10 2	.05 0.10 0.15 0.11	0 0 0 0.3	.04 .05 .02 --	.05 clean up of mercury from 0.20 floor and floor drains.	
	9206		Substores General Air, Breathing Zone and Work level	None needed, no present Hg storage	5	0.01	0.0	0.0	0.0	
	9211	Isotopes Lab.	General Air, Breathing Zone and Work level-ventilation, pumping, distillation and storage	Good General and Local Exhaust-Some closed systems	11	0.02	0.0	0.0	0.0	
			Source Zone-2 or 3' above still pot	Excellent Ventilation	1	>7.3	--	--	--	
	9720-6	Chemical Stores	General Air and Breathing Zones-at Hg storage Source Zone-on floor on bottom shelf General Air, Breathing Zone and Source Zone-Former Hg storage	Jars sealed and neatly stored None needed-room now empty	6 1 3	0 >0.3 0	0 -- 0	0 -- 0	0 -- 0	
	9731	XAX	General Air-Processing units Breathing Zone-Processing units Work level-Processing units Source Zone-Processing units	Good General Exhaust Good General Exhaust Good General Exhaust Good General Exhaust	7 11 2 3	0 .11 0 >0.60	0 0 0.04 0	0 0 0.17 0	0 0.01 0.27 0	
	9733-3	1	General Air-Former Hg changing station Breathing Zone-Former Hg changing station Source Zone-Former Hg changing station	Good General Exhaust Good General Exhaust Good General Exhaust	4 4 4	0 0 >0.4	0 0 0.02	0 0 3.04	0 0 >0.14	
	9737	Welland Gauge Shop	Breathing Zone-Shop not in use Source Zone-at floor drains	Good Ventilation Available Good Ventilation Available	5 4	0.14 >0.60	0.02 0.16	3.04 >0.60	0.07 >0.49	

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Y/HG-0068

Index No. Y-780
This document contains 42 pages.
This is copy of 131, Series A.

Subject Category: Health and Biology

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
Y-12 PLANT

W-7405-eng-26

HEALTH PHYSICS PROGRESS REPORT

November 1, 1950 - December 31, 1950

CLASSIFICATION CHANGED TO UNCLASSIFIED
BY AUTHORITY OF THD-1148
BY Betty S. ROSE DATE 5-17-59

E. G. Struxness

Oak Ridge, Tennessee
June 14, 1951

UNCLASSIFIED

Derivative Classifier R. M. Hill, Consultant
(Name and title)

JAN 23 1990

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Mercury

Mercury is used in most laboratories; consequently, vapor contamination of the air is potentially existent. Routine monthly investigation of laboratories for mercury contamination in air has been started. Due to the magnitude of the beryllium air analysis program during this period, mercury vapor pollution in air has been investigated on a request basis only. Plans are under way to monitor certain areas where mercury is used in fairly large quantities on a regular schedule.

Air Analysis. The G. E. Mercury Vapor Detector is utilized for the detection of mercury vapor in air. This instrument is commonly employed in industrial hygiene field studies for evaluating mercury vapor contamination of workroom atmospheres.

A study was made in Room 14 (Bldg. 9733-3) for mercury contamination. Only 1 finding out of 15 exceeded the hygienic standard for mercury exposures of 0.1 $\mu\text{gm}/\text{M}^3$. Samples were taken at breathing level.
mg?

One of the warehouses (Bldg. 9720-5) was checked for mercury surface contamination. Breathing level concentrations approached 0.1 mg/M^3 in N. E. section of the warehouse. Mercury contamination of the floor was excessive throughout this general area.

Control. The most effective control measure for suppressing mercury contamination in air is good housekeeping. Positive findings, i. e. findings in excess of the exposure standard, are attributed to poor housekeeping. A vacuum cleaner, employing a hopcalite filter which absorbs mercury vapor, is being built for use in cleaning up areas contaminated with mercury. An attempt has been made to interest a private manufacturer to design and build a hand portable vacuum cleaner for use in cleaning up mercury metal. Several engineers from the Oak Ridge Plants met with an industrial representative and outlined the desirable and essential features which should be incorporated in the cleaner.

A commercial product, HgX, has been used in small quantities in one of the laboratories handling considerable mercury. This compound reacts with the exposed surface of the mercury globules to form a mercury compound which is non-vaporizing. This material is being used as a cleaning aid to reduce vapor contamination.

Turpentine

Turpentine is used in a coolant mixture for certain lathe operations in beryllium machining.

Y-836

Y-12 CENTRAL FILES
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HEALTH PHYSICS PROGRESS REPORT

January 1, 1951 - June 30, 1951

C&CCO IV
Reports of
File No.
Date

Y-12 PLANT
CARBIDE AND CARBON CHEMICALS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
OAK RIDGE, TENNESSEE

RESTRICTED AREA

[illegible]

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Index No. Y-836

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Subject Category: Radiological
Safety

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
Y-12 PLANT

W-7405-eng-26

HEALTH PHYSICS PROGRESS REPORT

January 1, 1951 - June 30, 1951

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BY Betty S. Rose DATE 4-4-57--

E. G. Struxness

Oak Ridge, Tennessee
December 15, 1951

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emitted from the equipment in an effort to discontinue the unsafe practice of working within the confines of the hood. Results of samples taken outside the hood were well below the MPL of $2 \text{ ug}/\text{M}^3$.

Beryllium contamination arising from other operations in areas listed in these tables were well within the MPL.

Other Contaminants

Air Analysis. Results of other contaminants sampled during the first half of 1951 are compiled in Table VI. No attempt was made to tabulate individual findings; however, air analyses in excess of the MPL are classified as positive and the number of positive results are listed. Air analyses for phosgene, hydrogen sulfide, and mercury totaled 8, 5, and 76 respectively, with no positive findings recorded for the first two contaminants. Twenty positive results were found for mercury. These findings indicate excessive surface contamination and poor housekeeping; for, the general level of mercury vapor contamination was well within the MPL for the operations investigated.

Other Activities

Filter Paper Evaluation. A program is underway to evaluate filter papers used for the field sampling of particulate contamination. At the present time, this department employs Whatman papers No. 42 and No. 44 with a standard filter paper adapter (1" i. d.) in conjunction with equipment which was illustrated and described in Health Physics Report Y-780. The project was initiated in the latter part of June and results are inconclusive at this time.

The pressure drop across filter papers was checked using a Gast Pump and rotameter as employed in field sampling. It was found that the resistance across clean Whatman papers No. 42, No. 44 and No. 41 was 16.6, 6.2, and 0.47 inches of mercury (gage) respectively at an air flow rate delivered by the Gast Pump when using No. 42 paper; hence, the other papers were compared at the same volumetric rate. Both No.'s 42 and 44 papers have high resistance and plug rather rapidly which tends to reduce the volume of air which can be aspirated through the papers during sampling. It might be added that No.'s 42 and 44 papers were evaluated previously for penetration using the CWS D. O. P. apparatus and were found to have extremely low penetration, however, the inherent high initial resistance coupled with the rapid resistance build up with plugging detracts from the suitability of these papers for routine air sampling.

TABLE VI

CONTAMINANT-AIR ANALYSES, 1ST AND 2ND QUARTERS, 1951

Contaminant	Area	Operation	Maximum Permissible Limit	Number of Analyses	Number of Positive Analyses	Remarks
Phosgene	Building 9211	Chlorination	1 P.P.M.*	8	0	
		Zirconium				
Hydrogen Sulfide	Building 9206	Zirconium	20 P.P.M.	5	0	
		Process				
Mercury	Building 9733-1 Room 4	Spectrographic Analyses	0.1 mg/M ³	8	1	
	Building 9201-3 Van de Graff	Cleaning mercury		30	12	No source Ventilation
		Diffusion				
		Pumps				
	Building 9733-1, Room 19	Mercury cells.		16	2	Good General Ventilation
		General Atm. Concentrated				
	Building 9733-2, Room 1	Mercury cells.		12	5	Good General Ventilation
		General Atm.				
		Concentrated				
	Building 9403-1	Filling Manometer		10	0	

* P.P.M. - Parts per million parts of air, by volume.

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HEALTH PHYSICS
PROGRESS REPORT

July 1, 1951 to December 31, 1951

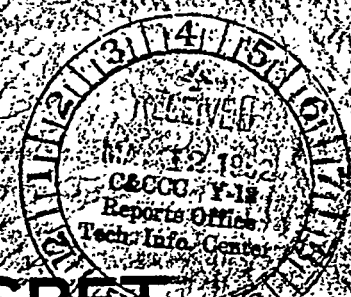
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Y-12 PLANT
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A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
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HEALTH PHYSICS PROGRESS REPORT

July 1, 1951 to December 31, 1951

E. G. Struxness, Department Superintendent

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INDUSTRIAL HYGIENE

Beryllium (W. H. Baumann)

During the last half of 1951, 1518 air samples were analyzed for beryllium. A summary of the air sampling, including type and location, is given in Table 1. Four positive results ($> 2 \mu\text{gm}/\text{M}^3$) were recorded and are listed separately at the bottom of the table. The volume of beryllium and beryllium oxide handled in the machine shop was low during this period, however, the control program was not relaxed.

Mercury (W. H. Baumann and M. E. Barnes)

Air Analysis. A total of 453 air samples were taken for mercury contamination at various locations throughout the Y-12 area. Considerable amounts of mercury are used in connection with the Alloys Development Project. Spillage of material presents the major problem since equipment modification and process alterations involve rather frequent disassembly of equipment. Good housekeeping coupled with exhaust ventilation and general air circulation provide reasonably effective control of mercury vapor contamination.

Employees are provided with shoes and issued freshly laundered work clothes wherever it is indicated that large amounts of mercury are handled. No smoking or eating is allowed in contaminated areas. Urine specimens are analyzed for mercury. However, their value is questionable because it appears, from our experience and from the literature, that the amount of mercury excreted is not related quantitatively to exposures.

A summary of the air samples taken during the period of this report is presented in Table 2.

Determination of Mercury in Urine. The urine samples, submitted by personnel in the A.D.P., are now being sent to K-25 for analysis. A study has been made of the K-25 method of determining mercury in urine and equipment has been arranged in Building 9733-4 for using this procedure. Solutions must be prepared and the method and equipment standardized before we are ready to perform the analysis here.

TABLE 2
MERCURY-AIR-ANALYSES

Area	Type of Samples	Location	Number of Samples	Mercury Air-Concentration mg/M ³		
				Min.	Max.	Average
A.D.P. Building 9201-2	General Room and Working Atmosphere	General Area Samples	87	.00	.25	.06
	Sump Area	10' Radius of Sump	18	.02	.60	.19
	Operational and Breathing Zone	In Area of Equipment and Test Table	318	.00	.60	.06
Van de Graaff 9201-2	Operational and Breathing Zone		23	.00	.17	.04
9733-2	Operational and Breathing Zone		7	.00	.22	.07

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CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
Y-12 PLANT

Contract No. W-7405-eng-26

HEALTH PHYSICS PROGRESS REPORT

January 1, 1952 to July 1, 1952

W. G. Struxness
HP - 1344 Dept.
2/24/52

E. G. Struxness, Department Superintendent

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Oak Ridge, Tennessee
February 19, 1953

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INDUSTRIAL HYGIENE

W. H. Baumann and M. B. Long

Air Sampling

Routine air sampling is still being carried on at all beryllium and mercury handling operations. Other atmospheric contaminants are investigated as conditions indicate.

Air analysis data show that control measures are very effective where beryllium and its compounds are handled. Mercury contamination is fairly well controlled, although housekeeping practices are relaxed at times, thus giving rise to excessive concentrations of mercury vapor in air. A summary of all air-sampling data covering this report period is presented in Table 1.

Hood Design

In an effort to reduce uranium contamination arising from machining operations, an evaluation program of hood design and performance was planned. The problem was simplified, somewhat, because the operations involved just two types of lathes. Hence, the hood design could be standardized. Experimental hoods were installed on several machines, and air analysis data were collected. After final approval by the Chemical Division and the Health Physics Department, the hoods will be fabricated and installed on all machines.

The various hoods which have been tested are shown in Fig. 1. The final design has been fixed on Type 3 in Fig. 1 for use with the larger lathe; and Type 6, with the smaller machine.

Stack Sampling

In connection with the proposed installation of hoods, the need for air cleaning had to be determined since the original exhaust ventilating systems were not equipped with dust filters. It was expected that the uranium concentration in exhaust ducts would increase with the installation of localized ventilation and that air cleaning would be important both from the standpoint of recovery and air pollution.

TABLE I

INDUSTRIAL HYGIENE AIR SAMPLING DATA

Contaminant	Number of General Air Samples	Number of Operational and Breathing Zone Samples	Number of General Air Samples Exceeding MPL	Number of Operational and Breathing Zone Samples Exceeding MPL
Beryllium	1540	206	2	12
Mercury	41	1199	8	195
Ammonia	17	15	0	5
Lead	5	10	0	0
Carbon Tetra-chloride	0	26	0	0
Hexone	14	16	0	0
Ether	4	5	0	0
Acetylene	0	6	0	0

The first hood (Type 5, Fig. 1) installed on a small lathe used for a polishing operation incorporated a chamber in which fiber filters were inserted. When samples were taken with an isokinetic sampler in the branch duct, the individual fiber filters were found to be neither practical nor economical.

At this time, Dr. Leslie Silverman (See Introduction) was consulted for advice in the selection of air cleaning equipment. He recommended that chip traps be substituted for the fiber filters and also that all exhaust ventilating systems handling normal uranium be connected to a central air cleaner of high collection efficiency.

Dust concentrations which passed through the ventilation duct from the larger lathe, operating at low spindle speeds, were of the order of 0.002-0.04 grains per 1000 cubic feet (gr/1000 ft³). The installation of the chip trap did not change this concentration. In addition to the unfavorable location of the initial trap in reference to the hood outlet, the design seemed to be inadequate in other respects.

Samples were taken in ventilation ducts which contained the exhaust air from hoods in the normal foundry operations, and uranium concentrations

ranging from 0.0024 to 6.8 gr/1000 ft³ were obtained. Preliminary data have indicated that a central air cleaning system for normal operations would be capable of handling the low loadings effectively.

Mercury Analysis in Urine

Information received at Kettering Laboratory was useful in setting up a method for the determination of mercury in urine. Some modifications were made in order to carry out the determinations on a routine basis. The digestion apparatus was altered so that the two digestions could be carried out in the same equipment instead of using a different apparatus for each digestion. The procedure itself was simplified so that it was possible for one person to do as many as sixteen determinations per day with a bank of eight digestion assemblies. The accuracy of duplicate determinations in this laboratory was within 0.02 milligrams of mercury per liter of urine. To date, approximately one hundred routine determinations have been made, and all but one show concentrations below 0.3 mg/liter.

Hexone Analysis

Since the last report on this work, the use of an explosimeter has shown that the concentrations of hexone in the air of Building 9211 do not create a fire hazard. The concentrations were not critical even during a simulated spill when hexone was splashed on the floor. An accurate method for the quantitative chemical determination of hexone in air in the range of 100 ppm has not been developed. Hexone determination in air may be possible by using an infrared spectrophotometer. Since this instrument is not available at the present time, some research and instrumentation work will have to be done prior to any hexone determinations.

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HEALTH PHYSICS PROGRESS REPORT

July 1, 1952 through December 31, 1952

E. G. Struxness, Department Superintendent

Oak Ridge, Tennessee
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Y-215	Y-836
Y-237	Y-858
Y-259	Y-940

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INDUSTRIAL HYGIENE SECTION

Air Sampling

Routine air sampling continued at all uranium, beryllium, and mercury handling operations. Analyses for other air contaminants were made whenever conditions warranted.

Air analyses for mercury indicated a trend toward higher concentrations which resulted from the rapid expansion of the mercury handling facilities and the lag in the installation of ventilation equipment and in the development of good housekeeping practices. A large percentage of mercury samples which were above the MPL were obtained in the research and development areas; production areas are under relatively good control.

Effective control measures in areas handling beryllium and its compounds continued. A summary of the data from air contaminants is presented in Table 1.

TABLE 1

AIR SAMPLING DATA

Contaminant	No. of General Air Samples	No. of Operational and Breathing Zone Samples	No. of General Air Samples Exceeding MPL	No. of Operational and BZ Samples Exceeding MPL
Beryllium	906	125	0	0
Carbon Monoxide	10	0	0	0
Hydrogen	0	5	0	0
Lead	10	2	0	0
Mercury	4612	288	1416 (31%)	96 (2%)
Zirconium	6	0	0	0
Hydrogen Fluoride	8	0	0	0
Uranium	9388	3730	116	741

Breathing Zone

Quarterly results of air analyses for uranium are presented in Tables 2 and 3. Most of the contamination levels shown in these tables are lower than comparable ones for the previous report period. A notable exception is the result of the breathing-zone samples taken at the operation handling enriched, soluble material, where respiratory protective equipment was

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INDUSTRIAL HYGIENE SECTION

Air Sampling

Routine air sampling continued at all uranium, beryllium, and mercury handling operations. Special operations involving other contaminants were checked. A summary of results is presented in Table 1.

TABLE 1

AIR SAMPLING DATA

Contaminants	No. of General Air Samples	No. of Operational and Breathing-zone Samples	No. of General Air Samples > MPL	No. of Operational and Breathing-zone Samples > MPL
Mercury	6,514	136	1,671	21
Beryllium	458	43	0	2
Cyanide	0	4	0	0
Lead	0	5	0	0
Nitric Acid	0	9	0	0
Silica	0	10	0	10
Fluorides	0	8	0	0
Caustic Hydroxides	0	6	0	0
Uranium	10,940	1,266	198	451

Approximately twenty-five per cent of mercury air analyses exceeded the MPL of 0.1 mg/M^3 because of the rapid expansion of mercury handling facilities.

Quarterly results of air analyses for uranium are presented in Table 2. With few exceptions contamination levels for this period are comparable to those of the preceding period. Breathing-zone samples taken in areas processing enriched soluble uranium show a significant decrease. Installation of localized ventilation was responsible for this reduction. Increased levels of air contamination are noted in breathing-zone samples taken in both normal insoluble, and enhanced insoluble work areas. This increase

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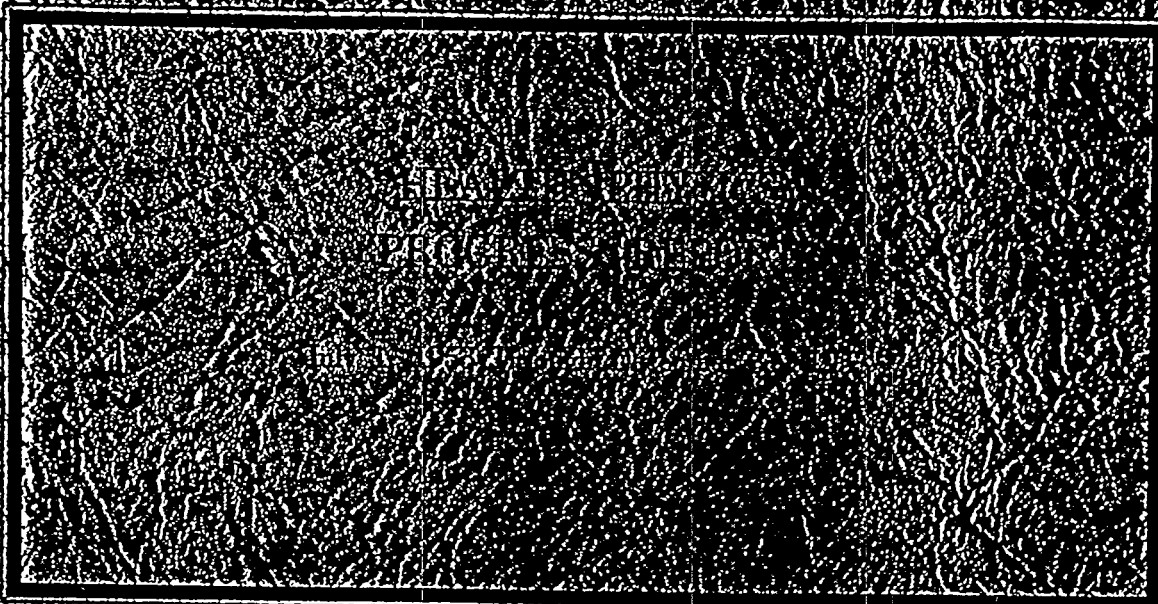
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INTRODUCTION

Personnel monitoring and routine counting of air samples, smears, and plated samples continued during the latter half of 1953.

A rather lengthy section on "Kinetic Treatment of Distribution and Excretion of Uranium" is included in this report; when this study is completed, it will be issued as a separate document.

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INDUSTRIAL HYGIENE SECTION

Air Analyses

Routine air sampling continued on uranium, beryllium, and mercury handling operations. Other contaminants were sampled to determine the degree of hazard associated with specific operations. A summary of data from air-contaminant analyses is presented in Table 1.

TABLE 1
AIR SAMPLING DATA
July - December 1953

Contaminants	No. of General Air Samples	No. of Operational and Breathing-zone Samples	No. of General Air Samples Exceeding MPL	No. of Operational and Breathing-zone Samples Exceeding MPL
T-9 Beryllium	245	37	0	0
Carbon Monoxide	2	2	0	0
Dust	15	9	0	0
Fluoride	8	--	1	--
Lead	2	--	0	--
Mercury	10,936	--	3,869	--
Ozone	3	--	0	--
Silica	8	2	8	2
Uranium	13,023	684	788	224

Continuing rapid expansion of mercury handling facilities has made control of air contamination difficult. Two permanent systems for constantly recording mercury vapor concentration were installed and five portable detector-recorder units were procured. Approximately 35% of mercury air analyses exceeded the MPL of 0.1 mg/M³. A large number of analyses exceeding the MPL were obtained either in research and development areas or production areas when a new process plant was being started.

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Ten permanent-type air samplers were added in the normal uranium machining area of Building 9212. A permanent general-air sampling system with five sampler locations was installed in the "Sparkplug" production and salvage area of Building 9206. Uranium general-air analyses indicated adequate control, since only 5% exceeded the MPL of 70 d/m/M³. The high percentage of uranium breathing-zone samples which exceed the MPL occurs because the sampling program was concentrated on operations that are known to lack effective control. A further breakdown of uranium analyses is given in Table 2. Most contamination levels shown in this table are higher than comparable levels for the first half of 1953. This rise is attributable to an increase in production.

TABLE 2

URANIUM AIR ANALYSES

Type of Material	Area	3rd Qt. Uranium Air Conc. d/m/M ³	4th Qt. Uranium Air Conc. d/m/M ³	Type of Sample	Respirator Equipment
Normal Soluble	9206-A	105	---	BZ*	Worn
Normal Soluble	9206-A	54	320	BZ	Not worn
Normal Soluble	9206-A	---	---	GA**	Not worn
Normal Insoluble	9206-A	843	---	BZ	Worn
Normal Insoluble	9206-A	26	56	BZ	Not worn
Normal Insoluble	9206-A	137	---	GA	Not worn
Normal Insoluble	9212-B	292	38	BZ	Not worn
Normal Insoluble	9212-B	7	14	GA	Not worn
Enriched Soluble	9212-B	19	143	BZ	Not worn
Enriched Soluble	9212-B	7	11	GA	Not worn
Enriched Insoluble	9212-B	10,981	---	BZ	Worn
Enriched Insoluble	9212-B	283	268	BZ	Not worn
Enriched Insoluble	9212-B	54	51	GA	Not worn

*BZ - Breathing-zone.

**GA - General Air.

Permanent air samplers in five sections of the uranium production area were operated during the day shift. Monthly averages of levels recorded by these systems are presented in Figures 1 and 2. Variations in normal foundry findings were due to dismantling and reconstruction work, production differences, and ventilation system failures. Reduction of air-borne uranium concentration in the enhanced chemistry section after October was due to installation of exhaust louvers in the packing and grinding room. Fluctuations of general air contamination in the enhanced foundry and machine shop were correlative with variations in production and the occurrence of large fires and other unusual situations.

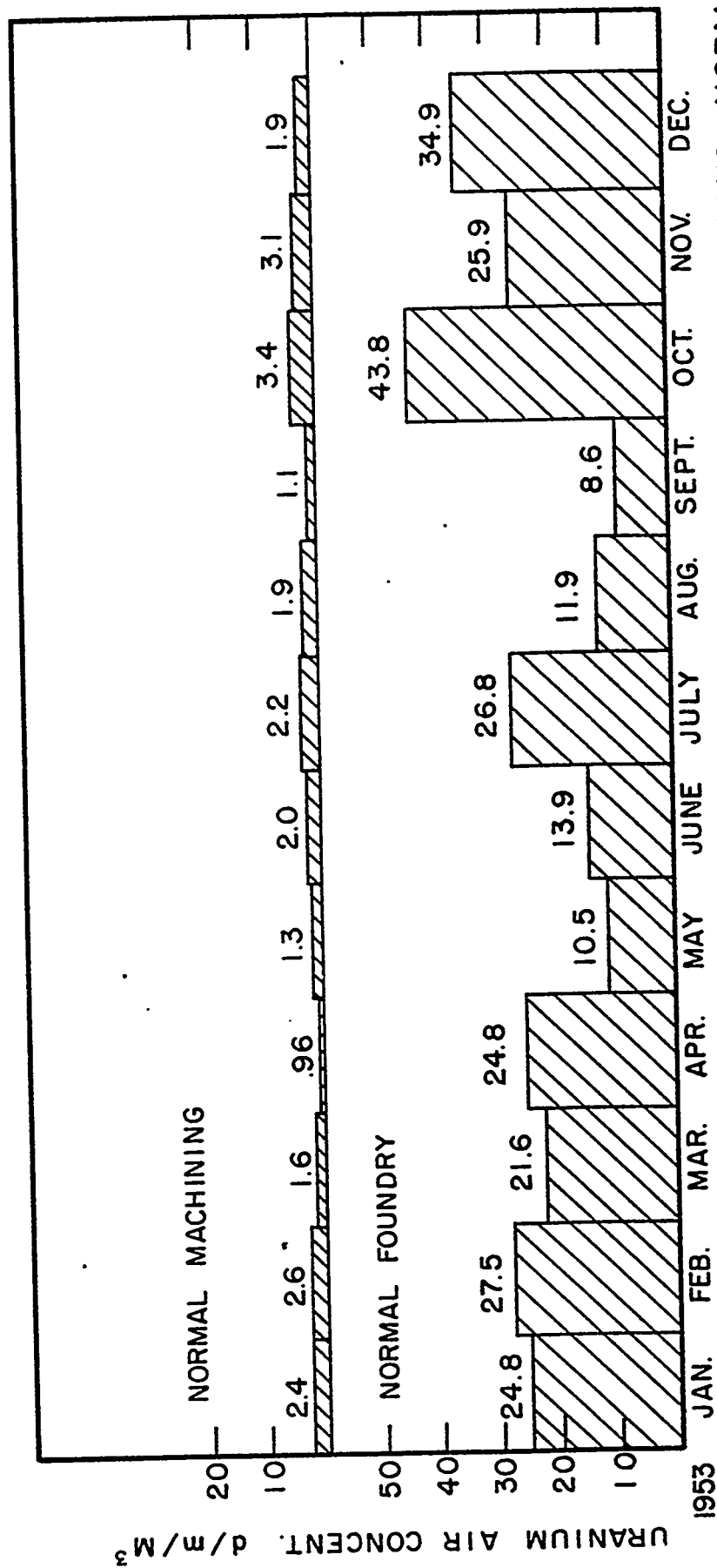
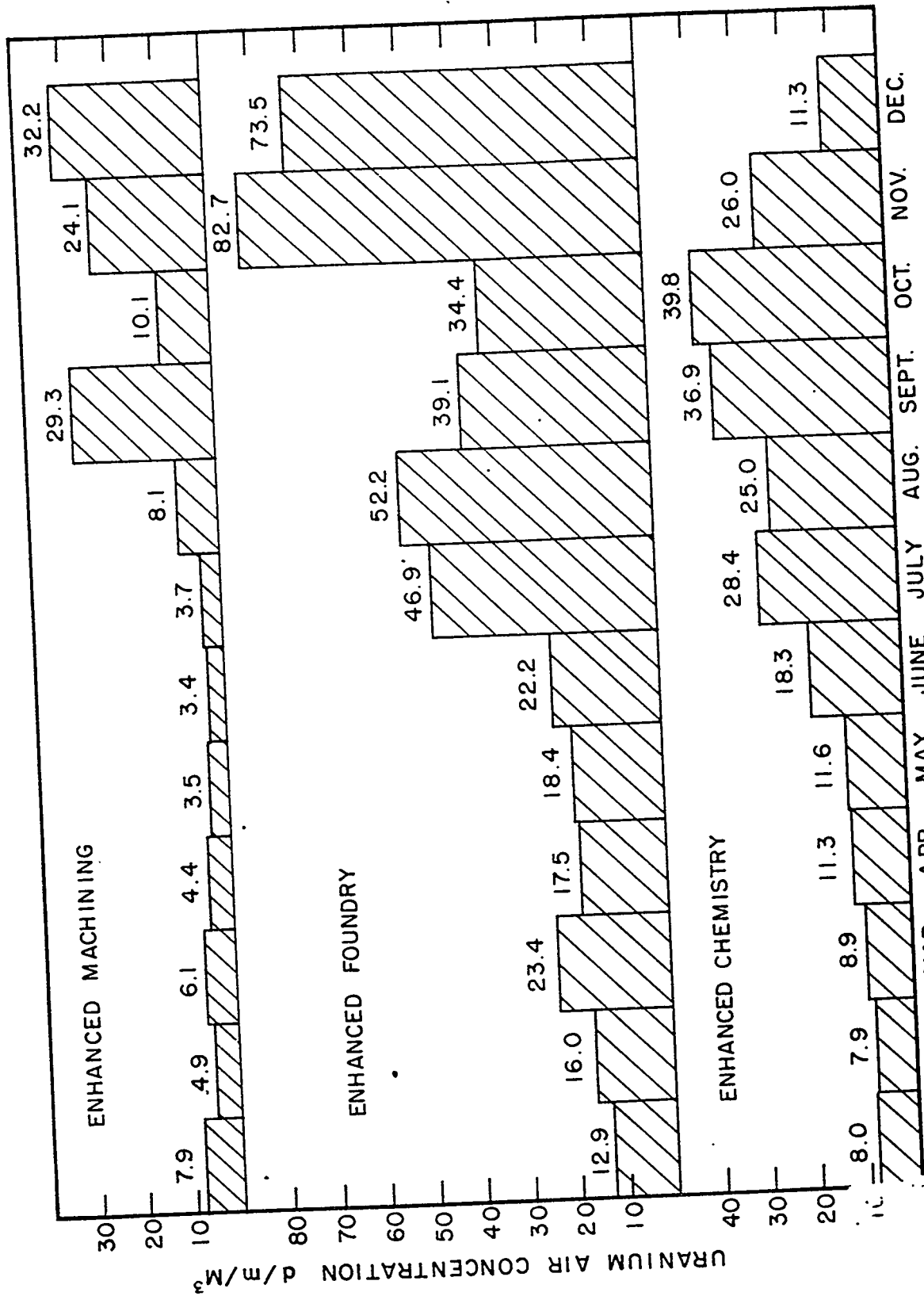


FIGURE 1. MONTHLY AVERAGES OF GENERAL AIR CONCENTRATIONS - NORMAL OPERATION.



1953 JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

FIGURE 2. MONTHLY AVERAGES OF GENERAL AIR CONCENTRATIONS - ENHANCED OPERATION.

Stack Sampling

Due to changes and additions being made in air exhaust systems, greater emphasis was placed on stack sampling. Stack sample analyses are reported in Table 3.

TABLE 3
STACK AIR ANALYSES

8.6
lb/day

Contaminant	Building	System	No. Samples	Average Rate Lost g/24 hrs.	Average Contaminant Concentration mg/M ³
Mercury	9204-4	Tray vent system	16	3900	.05
Normal Uranium	9206	Incinerator stack	2	< .001	< .001
Normal Uranium	9206	Precipitron stack	25	9.4	.22
Normal Uranium	9211	Type "N" Roto-Clone	5	1360	.07
Normal Uranium	9206	Type "N" Roto-Clone	3	43.4	< .001

CONTAMINATION CONTROL SECTION

Surface Contamination

Surveys using the smear sampling method were continued to determine amounts of surface contamination. Table 4 shows number of areas surveyed, number of smears taken, and average activity per smear.

TABLE 4
SMEAR SAMPLE DATA

Area Categories	No. of Areas	No. of Smears Taken	Average Activity d/m/100 cm ²
Red	4	956	404
Yellow	61	9,908	133
White	41	4,941	5

Poplar Creek Water Sampling

Daily water samples were taken at random times from the East Fork of Poplar Creek and composited for weekly analysis. Table 5 indicates the analyses made and the average activity per sample.

TABLE 5
WATER ANALYSES

No. of Composite Samples	Normal U μ g/l	Enriched U d/m/l	Plutonium d/m/l	Mercury mg/l
26	85	490	750	0.57

Plans are under way for the installation of a water gaging and proportional sampling station.

Contaminated Clothing Survey

A study was made to determine the amounts of contamination on the outside of protective clothing and that which filters through the fabric. Direct readings and smear samples were taken at identical locations on both inside and outside of each garment. Table 6 is a summary of this study.

TABLE 6

CLOTHING CONTAMINATION SURVEY

No. of Garments Checked	Avg. Direct Readings in d/m/100cm ²		Avg. Smear Count in d/m/100cm ²		Per Cent Filtered Through Fabric Determined by		Per Cent of Loose Contamination	
	Outside	Inside	Outside	Inside	Direct Readings	Smears	Smear Count	Direct Readings
							Outside	Inside
1,033	16,500	1,860	851	76	11.3	8.9	5.2	4.1

RADIOLOGICAL SECTION

Area Monitoring

Three permanent air samplers were installed in the Assay Laboratory in Building 9205. Filters are changed twice daily on these samplers to isolate time of occurrence of high activity. Pu^{239} and other radioactive materials are assayed in this laboratory necessitating air and urine analyses.

Building 9207

The Cockcroft-Walton Linear Accelerator was installed in Building 9207 but has not created a serious Health Physics problem.

9212 B-1 Foundry

Studies of distribution of beta activity in normal uranium resulting from daughter products released in the casting process continued. Decrease in external exposure resulted from installation of new facilities and a more thorough knowledge of the problem. Control of charge materials is possible in smaller castings; for larger pieces an acid bath is contemplated to remove the layer containing beta active materials.

9212 Normal Machine Shop

An extensive study of beta radiation exposure from uranium daughter products was conducted in the machine shop processing normal uranium castings. A representative group of machinists wore film badges and finger rings. After 16 weeks it was decided that more general coverage was necessary, and all personnel engaged in machining or otherwise handling the metal were furnished film badges. During the 12 weeks in which all personnel wore film badges 18% of the meters revealed exposures over the weekly MPL; none exceeded the limit for the quarter.

Routine Analyses

Routine counting of air samples, smears, and plated samples continued. The number of plated samples increased from approximately 300 to 400 per week. Table 7 is a summary of the types of film monitoring devices processed.

TABLE 7

FILM PROCESSED

Regularly issued badges	8,290
Regularly issued finger rings including rubber pads	6,550
Visitor badges	4,500
Special badges	675
Special rings or pads	235
Neutron film	650
TOTAL	20,900

A total of 415 people were regularly issued one or more of the above meters.

ANALYTICAL SECTION

Electroplating Equipment

The new electroplating unit was completed and installed in September. Figure 3 shows the hood containing cells and power supplies.

Routine Analyses

A total of 8,711 urine analyses were performed: 5,895 electroplated (enriched uranium); 2,503 fluorometric (normal uranium); 296 mercury; and 17 plutonium.

Figures 4 and 5 show distributions of urinary-uranium concentration for personnel in production departments covered by the uranium urinalysis program. Rise in levels of results indicated in Figure 5 for the fluorometric analysis (43rd through 47th weeks) is due to contamination encountered in the Health Physics Laboratory. This condition is thought to have resulted from residual contamination contained in ventilation ducts. The increase in uranium excretion rates shown in Figure 4 may be correlated to some extent with this contamination; it is chiefly attributable, however, to the use of an improved plating process.

Representative workers from various groups in maintenance and operating departments assigned to mercury handling areas were scheduled for quarterly urinary-mercury analysis. Figure 6 gives the distribution of results obtained.

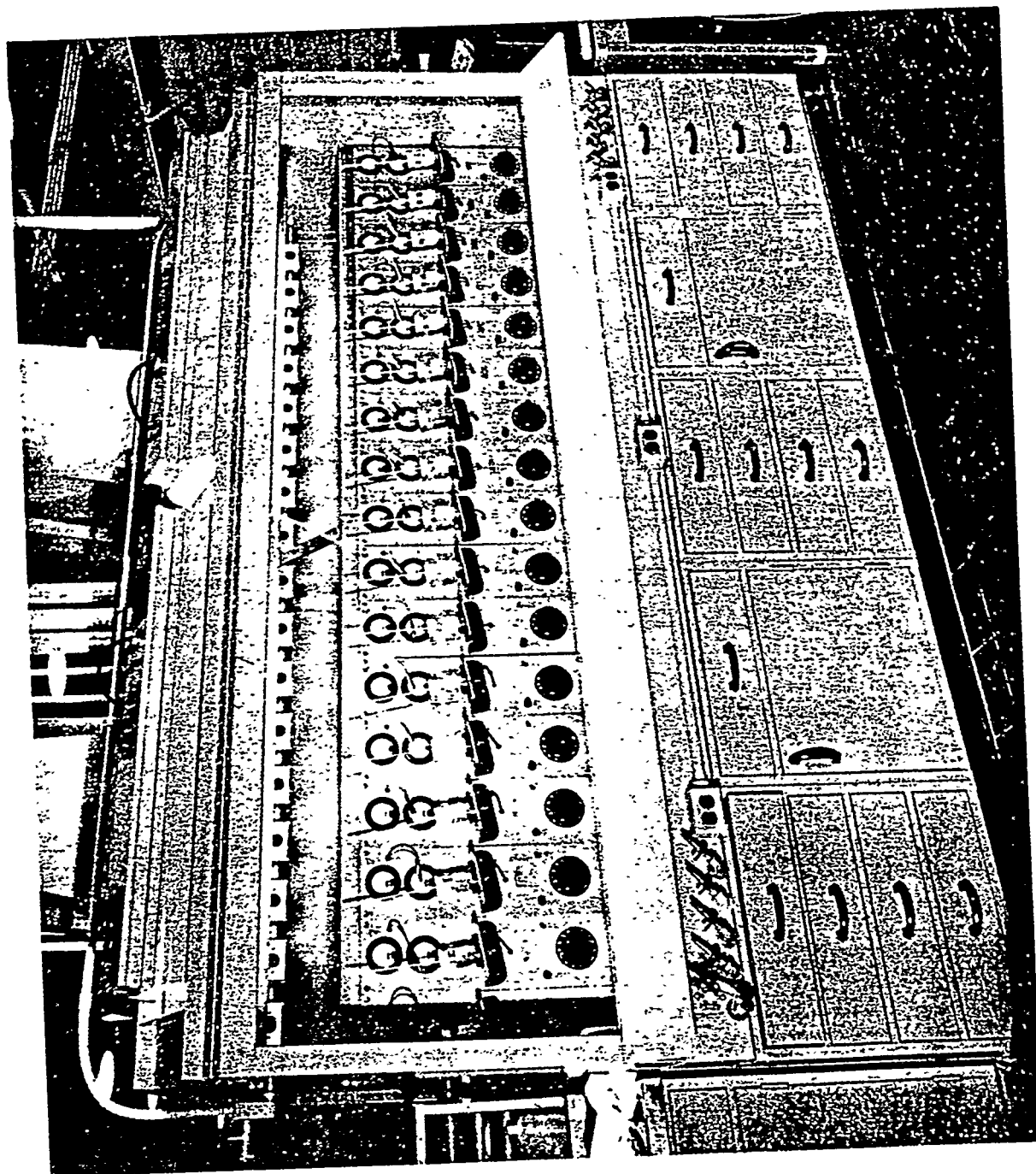


FIGURE 3. ELECTROPLATING UNIT

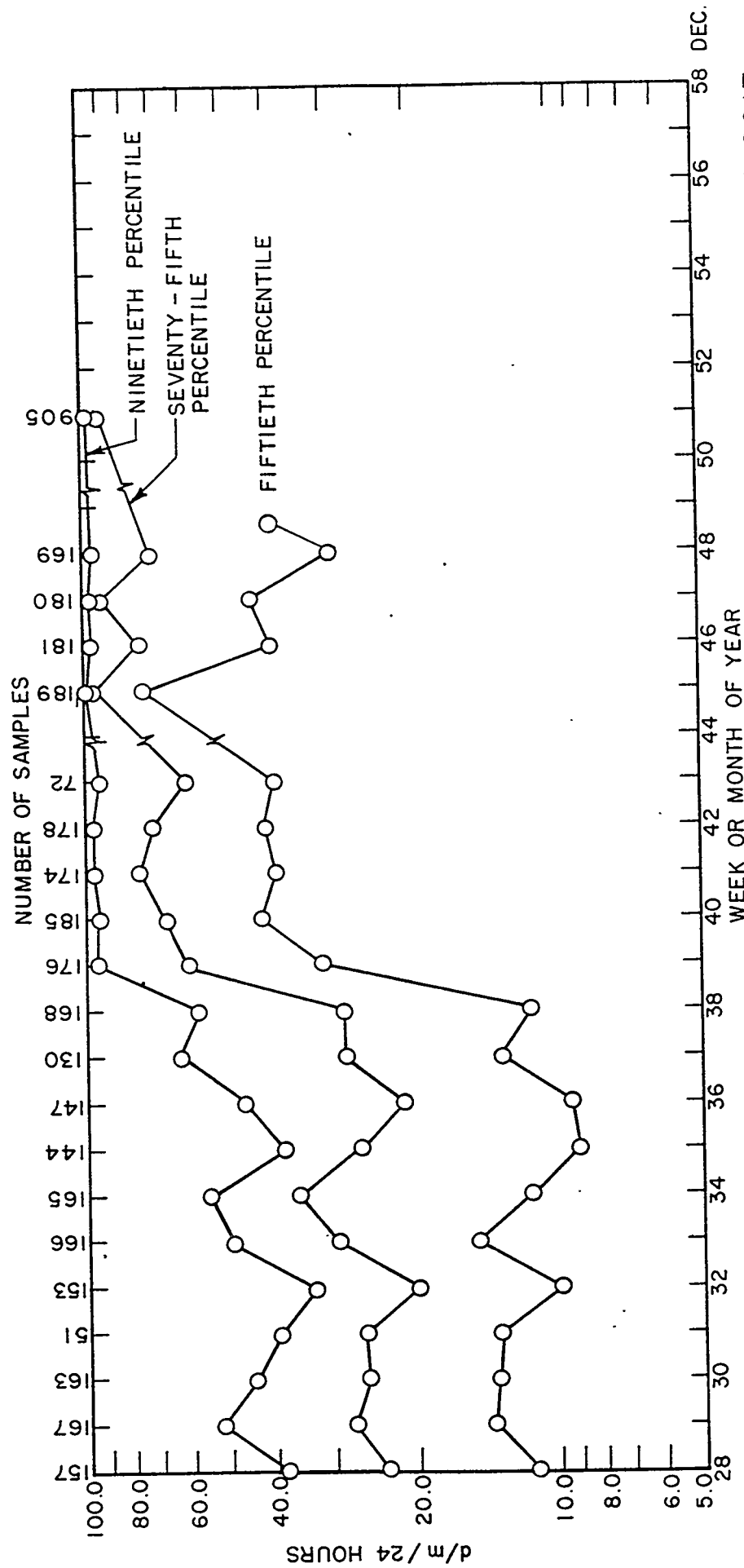


FIGURE 4. URINALYSIS RESULTS (ENHANCED) FOR LAST HALF 1953 - DEPARTMENT 2617

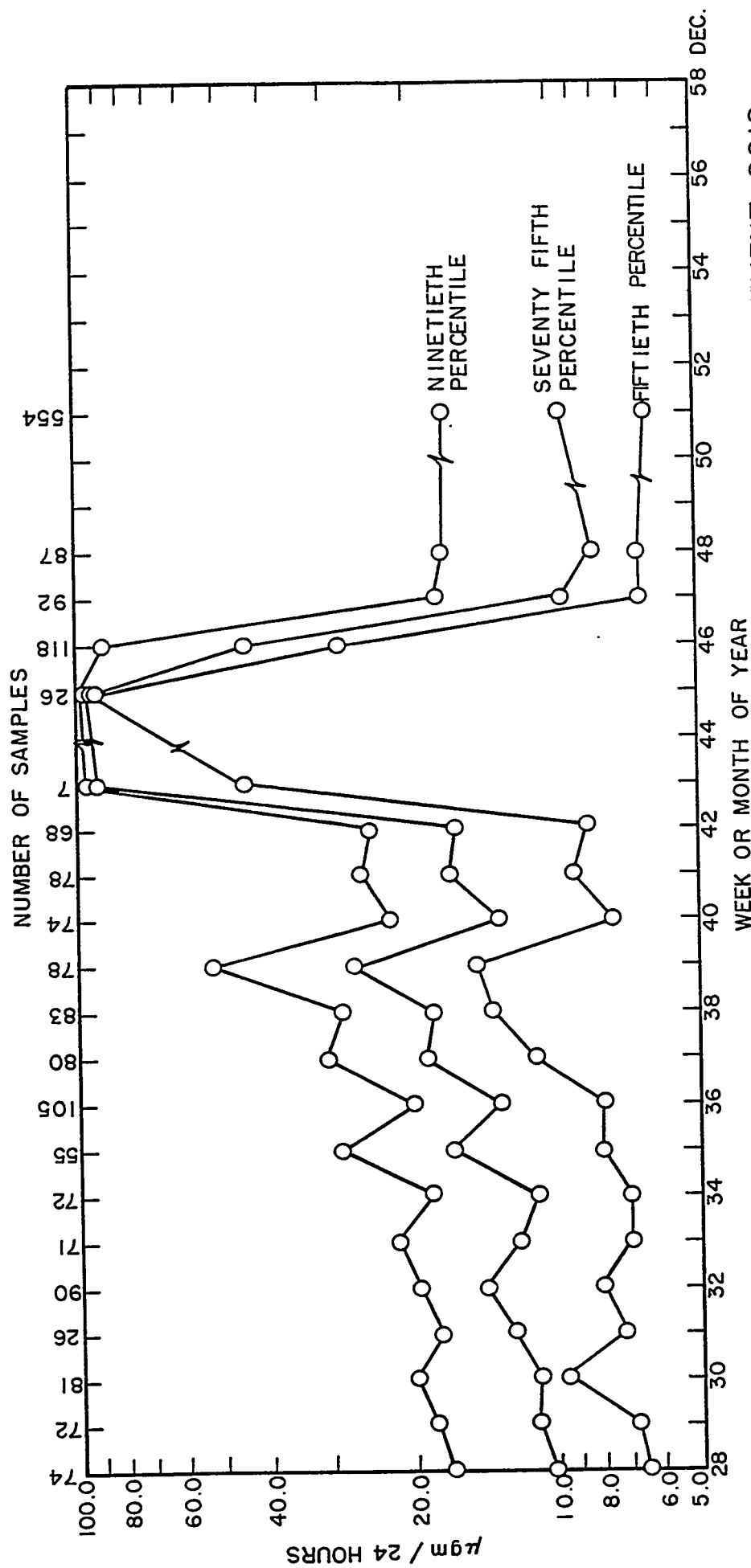


FIGURE 5. URINALYSIS RESULTS (NORMAL) FOR LAST HALF 1953 - DEPARTMENT 2618

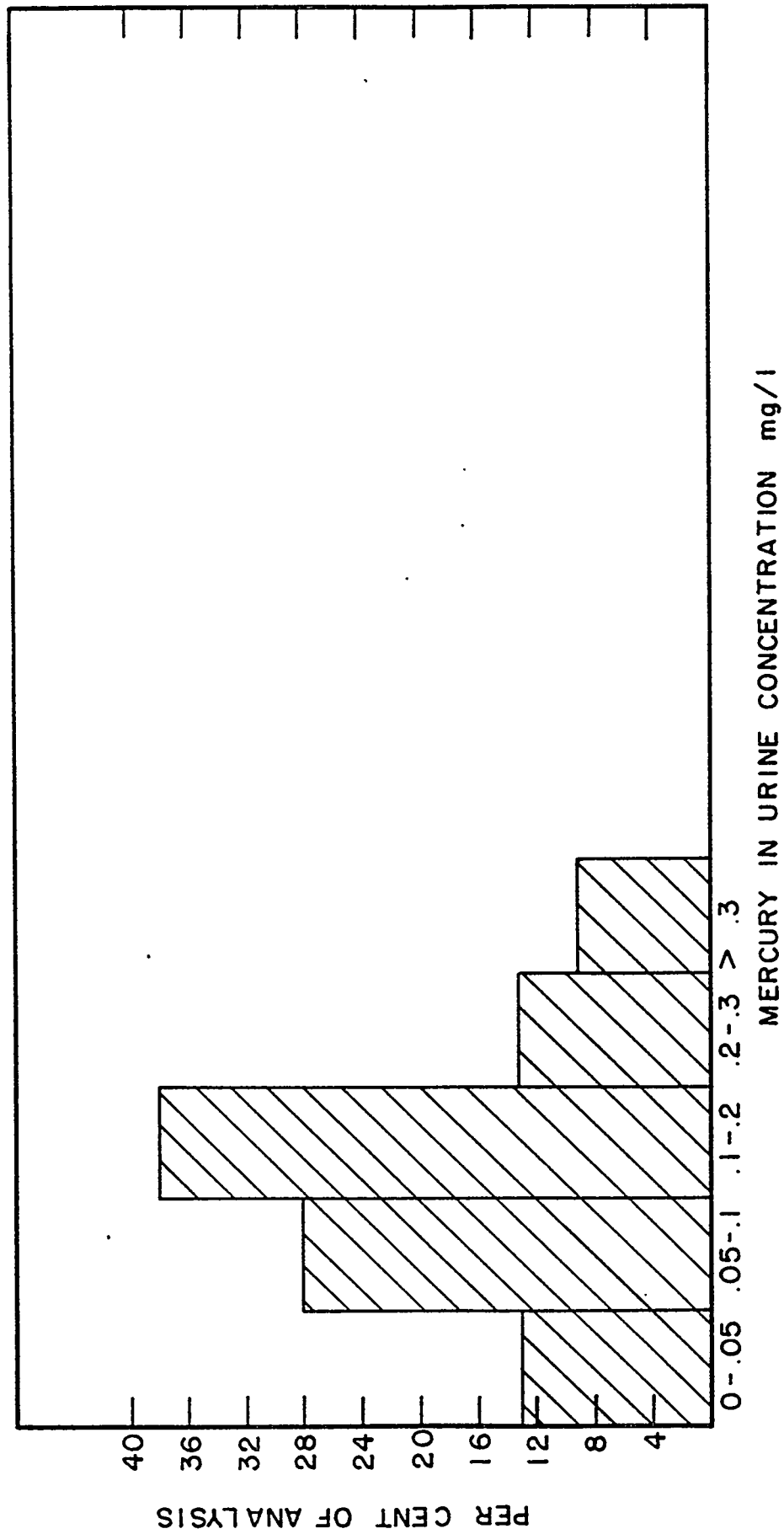


FIGURE 6. DISTRIBUTION URINARY MERCURY RESULTS

MLB
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DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. Y-1074/ER Author's Telephone No. 6-0263 Acct. No. 2366-0002 Date of Request 1/8/93
Unclassified Title: Health Physics Progress Report (July-Dec 1993)

Author(s) E.G. Struxness

TYPE: ☐ Formal Report ☒ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (identify meeting, sponsor, location, date): _____

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Document has been previously released ☐ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

Title(s): UNC Abstract: NADOCUMENT: Level UNC Category NASignature [Signature] Date 1/22/93

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MEMORANDUM

Date: June 1, 1995

From: Susan Flack

To: Tom Mongan

Subject: Availability of Summary Data Sheets for Mercury Air Concentrations in Buildings at Y-12

CHACH
1955
A-4, A-5 Hg Files?

Reconstruct the bldg that was estimated?
ALPHA

containing air data.

The following list describes the summary air data located to date in 36 boxes that were identified from a list of Radiation Safety boxes at the Y-12 Records Center. The summary data are monthly (or weekly) summary sheets of daily air measurements and show the calculation of monthly (or weekly) averages that were presumably used to calculate the quarterly averages reported in Y-12 quarterly reports and in Y/EX-21/DEL REV (previously known as Y/EX-24). These data will potentially be used to choose years and buildings to "spot check" quarterly average mercury air concentrations.

Building	Date	Monthly/Weekly	Box No.
Alpha-2, Beta-4	1955-56	M	20-9-17
Alpha-4,5	1956	M	Hg Files #62 20-9-17
Alpha-2	1957	M	14-11-1
Alpha-4,5, 81-10	1957,1958	M	14-12-12
Alpha-4	1958	M	14-11-1
Alpha-5	1960	M	14-11-1
Alpha-4,5, 81-10	1960	W	19-7-8
Alpha-4,5, 81-10, pump repair, rubber shop (9808) (9723-18)	1961, 1962	M	14-11-4

SUMMARY SHEETS IN 8 BOXES?
YES

Note: The dates appear to overlap and are not specific because the summary forms were not examined in detail when the boxes were initially opened.

(1955) 14-4-15
x 14-11-1 (1955, 60)
x 14-11-4 2-4,5 (1961, 62)
x 14-12-12 2-4,5 (1958)
(1958) 19-7-6
x 19-7-8 2-4,5 (1960)
** 20-9-17 2-4,5 (1956, 1956)*
(1953, 54) 2-2, 2-2, 2-2
→ (20-9-16) 2-5, 6 (1955)
20-9-15 2-2, 2-2, 2-2
11-7-19 2-2, 2-2, 2-2
18-4-11 2-4,5 (1956)

SURVEY SUMMARY SHEET

9201-5

Week Ending 1-8-60

Area	O*	M**	Total	M	T	W	T	F	S	Comments
No. 1 Cascade 1st Level	5				X					
No. 1 Cascade 2nd Level	5				X					
No. 1 Cascade 3rd Level	5							X		
No. 1 Cascade 4th Level	5							X		
No. 2 Cascade 1st Level	5				X					
No. 2 Cascade 2nd Level	5				X					
No. 2 Cascade 3rd Level	5							X		
No. 2 Cascade 4th Level	5							X		
No. 3 Cascade 1st Level	5				X					
No. 3 Cascade 2nd Level	5				X					
No. 3 Cascade 3rd Level	5							X		
No. 3 Cascade 4th Level	5							X		
No. 4 Cascade 1st Level	5				X					
No. 4 Cascade 2nd Level	5				X					
No. 4 Cascade 3rd Level	5							X		
No. 4 Cascade 4th Level	5							X		
No. 5 Cascade 1st Level	5				X					
No. 5 Cascade 2nd Level	5				X					
No. 5 Cascade 3rd Level	5							X		
No. 5 Cascade 4th Level	5							X		
No. 6 Cascade 1st Level	5				X					
No. 6 Cascade 2nd Level	5				X					
No. 6 Cascade 3rd Level	5							X		
No. 6 Cascade 4th Level	5							X		
Absorber Banks Nos. 1 and 2	5							X		
Absorber Banks Nos. 3 and 4	5							X		
Absorber Banks Nos. 5 and 6	5							X		
Pump [redacted] Areas 1	5				X					
Pump [redacted] Areas 2	5				X					
Pump [redacted] Areas 3	5				X					
Pump [redacted] Areas 4	5				X					
Pump [redacted] Areas 5	5				X					
Pump [redacted] Areas 6	5				X					
Purified Feed Storage	5				X					
Chemical Recovery	5				X					
1st Stage Feed Prep	5			X			X			
[redacted]	5							X		
Maintenance Areas	5				X					
Buffalo Pump	5				X					
Extract Area	5			X			X			
Lunch Rooms	5									
Office and CCR	5				X					
Evaporator Area	5			X						
Feed Mixing	5			X			X			
Inst. Shop					X					
Pump Shop				X	X		X	X		

* This is the optimum number of times per week that this area should be sampled.

** This is the minimum number of times per week that this area should be sampled.

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UNION CARBIDE NUCLEAR COMPANY
Division of Union Carbide Corporation

To:

Plant: Y-12

Date:

Copies To:

Subject: Weekly Solvent Air Analysis
Report for Building 9201-5

A total of 194 solvent air samples were taken during the week ending 1-8-60, to determine the level of solvent contamination in the various building areas. There was a total of 1 air samples greater than the MPL of .10 mg/M³. The percent of samples greater than the MPL was .51%. The building average for the week was .023. Listed below is a breakdown of the samples by days:

Days	Total Samples	No. > MPL	Avg. Bldg. Temperature	Avg. Bldg. Count
Monday	33			
Tuesday	68	1	62°	.023
Wednesday				
Thursday	33			
Friday	60	0	57°	.023
Totals	194	1	60°	.023

B. R. Clark

eb

Week Ending 1-8-60

** This is the minimum number of times per week that this area should be sampled.

INTER-COMPANY CORRESPONDENCE
UNION CARBIDE NUCLEAR COMPANY
Division of Union Carbide Corporation

To: Plant: Y-12
Date:
Copies To: Subject: Weekly Solvent Air Analysis
Report for Building 9201- 4

A total of 423 solvent air samples were taken during the week ending 1-8-59, to determine the level of solvent contamination in the various building areas. There was a total of 1 air samples greater than the MPL of .10 mg/M³. The percent of samples greater than the MPL was .23%. The building average for the week was .017. Listed below is a breakdown of the samples by days:

Days	Total Samples	No. > MPL	Avg. Bldg. Temperature	Avg. Bldg. Count
Monday	150	1	72°	.020
Tuesday	130	0	73°	.017
Wednesday	Sludge Burner 8110			
Thursday	143	0	73°	.015
Friday	8110 Alpha 5 Hg Burner Robber Shop			
Totals	423	1	73°	.017

B. R. (C) 1/1

eb

✓ Read text of these.
 ✓ Chart monthly bldg. avgs.

Bldg.
 Monthly Avg. Air Conc.

Source: mschr2-0242/
 Del Rev

Date	9204-4	9201-2	A-5	A-4	9204-2
4-55	✓	✓	✓	✓	
5-55	✓	✓	✓	✓	
6-55	✓	✓	✓	✓	
7-55	✓	✓	✓	✓	
8-55	✓	✓	✓	✓	
9-55	✓	✓	✓	✓	
10-55	✓	✓	✓	✓	
11-55	✓	✓	✓	✓	
12-55	✓	✓	✓	✓	
1-56	✓	✓	✓	✓	
2-56	✓	✓	✓	✓	
3-56	✓	✓	✓	✓	
4-56	✓	✓	✓	✓	
5-56	✓	← abbreviated →	✓	✓	✓
6-56	✓	✓	✓	✓	✓
7-56	✓	✓	✓	✓	✓
8-56	✓	✓	✓	✓	✓
9-56	✓	✓	✓	✓	✓
10-56	✓	✓	✓	✓	✓
11-56	✓	✓	✓	✓	✓
12-56	✓	✓	✓	✓	✓
1-57	✓	✓	✓	✓	✓
2-57	✓	✓	✓	✓	✓
3-57	✓	✓	✓	✓	✓
4-57	✓	✓	✓	✓	✓
...	...				
12-57	✓	✓			
1-58		✓			
...					
5-58					
...					
10-58		✓			
...					
3-59					

bldg. avgs. reported
 all 4 abbreviated

more bldgs.

81-10
 mcd
 ↓

Shutdown
 til 6-59

7-59
9-59
2-60

NONE

9204-2



800
400
8793

[Faint, mostly illegible handwritten notes and markings on lined paper. Some visible words include "Bureau" and "The".]

MS/CHR2-0242/DEL REV

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P. L. McKelvey 10/27/95

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GAYLOR

00830



Health Study Agreement
Y-12 Site DRC

DIVISION		DEPARTMENT		SECTION		BLDG.-ROOM	
Technical		Radiation		Ind. Hygiene		9711-1	
DESCRIPTION OF RECORDS				FROM	THROUGH	CODE NO.	RETENTION PERIOD
Be Personnel Reports				12-59	12-60	2090-IH-4	Indef.
Solvent Urine Reports				1-59	12-60	2090-IH-4	Indef.
Enclosed in box is a list of folders included in the box				101-452			
BOX NO. 64 OF 6		TYPE		NON-MATERIAL		<input checked="" type="checkbox"/> CLASSIFIED <input checked="" type="checkbox"/> UNCLASS.	
TO BE COMPLETED BY VITAL RECORDS DEPARTMENT							
LOCATION				RECORDS VERIFIED BY			
BLDG.	ROOM	ROW OR SECTION	TIER	SHELF OR DRAWER	BOX	O. C. Hartman	
1	19	7	7	7	7	1-15-63	
UCN-578 (12-5-59)							
RECORDS CONTROL							

ESSENTIAL AND VITAL RECORD

is been identified as essential and vital.
led in accordance with Energy Systems
GP-22 as administered by the Coord-
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Program.

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OAK RIDGE, TENN.

TO
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DATE July 12, 1955

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SUBJECT

Industrial Hygiene
Report for the Alloy
Division 2nd Quarter,
1955

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LJL
Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dai

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Industrial Hygiene
Report for the Alloy
Division 2nd Quarter,
1955

During the second quarter for 1955 24,033 general air samples for Solvent Vapor were taken in the Alloy Division buildings with the following distribution: 2,197 in 9204-4, 2,266 in 9201-2, 2,307 in 9201-4, and 17,263 in 9201-5. The percent of these samples equal to or greater than the maximum allowable concentration of 0.1 mg/m³ is as follows: 11% in 9204-4, 36% in 9201-2, 44% in 9201-4, and 53% in 9201-5.

In comparison with the 1st quarter findings there has been a significant reduction in the percentage of samples above MAC in 9201-2. Building 9204-4 has shown no significant change from 1st quarter results. Building 9201-5 showed a slight downward trend for April and May, but June findings showed little change from 1st quarter results. Attached tables give a complete summary for each building expressing the air concentration as a monthly average for all samples taken in various areas.

The Urine Participation Program was increased almost 100%. 748 people were sampled during the quarter and 192 or 26% of these contributed samples equal to or greater than the allowable Urine excretion level of 0.3 mg/l. Although more people were included in the program there was no significant change from the 1st quarter percentage above the allowable level. An attached table

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Solvent Air Analysis for
Alloy Division July, 1955

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The following tables give the average concentrations of Solvent Vapor in air for various areas in Alloy Division operations for the month of July.

Building 9204-4

There were 797 samples taken in 9204-4 with 6% being equal or greater than the MAC of 0.10 mg/m³.

AreaAvg. Concentration (mg/m³)

Bonnet Repair	0.07
Bonnet Storage	0.09
Demineralizer	0.04
Chemical Recovery	0.07
Flow Control Area	0.07
Blender Stations	0.06
Blender Stations (South)	0.03
Blender Stations (North)	0.04
Feed Prep Room	0.02
Evaporator Feed Room	0.04
Solvent Purification	0.10

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SUBJECT Solvent Air Analysis for
Alloy Division July, 1955

Building 9201-2

There were 502 samples taken with 41% of these equal or greater than
the MAC of 0.10 mg/m³.

AREA

Ave. Concentration (mg/m³)

NCTF	0.08
Colex Tray #1	0.06
Colex Tray #2	0.10
Colex Tray #3	0.15
PTF Area	0.10
PTF #2, 1st Floor	0.13
Water Fountain, 2nd Floor	0.03
Mechanical Shop	0.09
Walkway between NCTF and Trach	0.09
Machine Shop I-10	0.02
Lunch Room	0.03
Sub-basement	0.30

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SUBJECT Solvent Air Analysis for
Alloy Division July, 1955Building 9201-5

There were 5133 samples taken with 87% equal to or greater than the
MAC of 0.10 mg/m³.

Cassades Ave. Concentrations mg/m³

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.53	0.45	0.28	0.24	0.10	0.16
2nd Level	0.52	0.40	0.47	0.33	0.16	0.18
3rd Level	0.60	0.42	0.37	0.28	0.28	0.29
4th Level	0.37	0.28	0.16	0.14	0.13	0.16

Absorbors Ave. Concentrations mg/m³

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.17	0.22	0.26	0.24	0.13	0.44

Injection Pump Areas

<u>1st</u>	<u>2nd</u>	<u>3rd</u>
0.39	0.61	0.71

AreaAve. Concentration mg/m³

Purified Feed Storage	0.79
Chemical Recovery	0.56
1st Stage Feed Prep	0.22
2nd Stage Feed Prep Area	0.20
Mechanical Shop	0.11
Instrument Shop	0.08
Electrical Shop	0.11
Buffalo Pump Repair Area	0.35
Lunch Room	0.09
Control Room	0.04

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COPY TO**SUBJECT** Solvent Air Analysis for
Alloy Division July, 1955Building 9201-4

There were 2791 samples taken with 93% equal to or greater than the MAC of 0.10 mg/m³.

	<u>Cascades</u>	<u>Ave. Concentration mg/m³</u>
	#9	#10
1st level	0.22	0.33
2nd level	0.58	0.48
3rd level	0.37	0.34
4th level	0.40	0.37

<u>Area</u>	<u>Ave. Concentration mg/m³</u>
Absorber #9	0.29
Absorber #10	0.31
Pump for #9	0.32
Pump for #10	0.24
Hanging Garden #9	0.37
Hanging Garden #10	0.26
Feed Prep & Extract 1st level	0.16
Feed Prep 2nd level	0.29
Feed Prep 1st level	0.23
Feed Prep 2nd level	0.51
Feed Prep 3rd level	0.38
Evaporator Area	0.25
Electrical & Instrument Shop	0.13
Lunch Room	0.20

From the foregoing tabular data it is apparent that air levels in 9201-5 and 9201-4 increased significantly during the month of July. Indications the past few days in 9201-4 since wall removal in Absorber #10 and other measures to controll spillage in cascades that these levels are showing a downward trend.



Leo J. LaFrance
Industrial Hygienist
Medical Department

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LJL:dai

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TO
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List

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Sept. 14, 1955

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Solvent Air Analysis
for Alloy Division
August 1955

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Solvent Air Analysis for
Alloy Division - August, 1958

The following tables give the average concentrations of Solvent Vapor in air for various areas in Alloy Division operations for the month of August.

Building 9204-4

There were 1803 samples taken in 9204-4 with 17% being equal or greater than the MAC of 0.10 mg/m³.

<u>Area</u>	<u>Ave. Concentration (mg/m³)</u>
Bonnet Repair	0.11
Bonnet Storage	0.12
Demineralizer	0.09
Chemical Recovery	0.05
Flow Control Area	0.06
Blender Stations	0.07
Blender Stations (South)	0.04
Blender Stations (North)	0.03
Feed Prep Room	0.03
Solvent Purification	0.15

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Building 9201-2

There were 997 samples taken with 22% of these equal or greater than the MAC of 0.10 mg/m³.

<u>Area</u>	<u>Ave.</u>
I.CTF	0.08
Colex Tray #1	0.07
Colex Tray #2	0.08
Colex Tray #3	0.10
PTF Area	0.07
PTF #2, 1st Floor	0.10
Water Fountain, 2nd Floor	0.02
Mechanical Shop	0.09
Walkway between I.CTF and Track	0.06
Mechanical Shop, X-10	0.04
Lunch Room	0.03

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Building 9201-5

There were 4,098 samples taken with 87% equal or greater than the MAC of 0.10 mg/m³.

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	13
0.10 - 0.19	22
0.20 - 0.29	18
0.30 - 0.39	14
0.40 - 0.49	9
0.50 - 0.59	8
0.60 - 0.69	5
0.70 - 0.79	3
0.80 - 0.89	3
0.90 - 0.99	1
> 1.00	4

From the above tabulation it is apparent that the MAC is exceeded by factors of 2 to greater than 10 about 65% of the time in the various areas sampled.

The average concentrations in mg/m³ for the various areas is as follows:

	<u>Cascades</u>					
	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.53	0.50	0.34	0.24	0.08	0.18
2nd Level	0.60	0.64	0.31	0.43	0.10	0.16
3rd Level	0.56	0.43	0.27	0.30	0.23	0.31
4th Level	0.36	0.42	0.29	0.29	0.16	0.27

Absorbers

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.26	0.25	0.17	0.18	0.13	0.12

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.61	0.58	0.60

continued on page 4

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Building 9201-5

(Continued)

Purified Feed Storage	0.52
Chemical Recovery	0.46
1st Stage Feed Prep	0.28
2nd Stage Feed Prep	0.15
Mechanical Shop	0.12
Instrument Shop	0.06
Electric Shop	0.06
Buffalo Pump Repair Area	0.28
Lunch Room	0.07
Central Control Room	0.03

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Building 9201-4

There were 4,156 samples taken with 85% equal to or greater than the MAC of 0.10 mg/m³.

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% Samples</u>
< 0.10	15
0.10 - 0.19	41
0.20 - 0.29	29
0.30 - 0.39	9
0.40 - 0.49	4
0.50 - 0.59	1.2
0.60 - 0.69	0.4
0.70 - 0.79	0.2
0.80 - 0.89	< 0.1
0.90 - 0.99	0.1
> 1.00	0.1

From the above tabulation it is apparent that even though the percentage of samples equal to or greater than the MAC is comparable to that in Building 9201-5, the concentration range distribution is significantly different. For example only 2% of the samples taken in 9201-4 are equal or greater than 0.50 mg/m³ where as in 9201-5, 24% of all samples taken fall in this category.

The average concentrations in mg/m³ for various areas in 9201-4 is as follows:

Cascades

	<u>#8</u>	<u>#9</u>	<u>#10</u>
LST Level	0.20	0.18	0.15
2ND Level	0.23	0.25	0.20
3RD Level	0.19	0.18	0.17
4TH level	0.15	0.24	0.22

Absorbers

<u>#8</u>	<u>#9</u>	<u>#10</u>
0.12	0.17	0.13

Pump Areas

<u>#8</u>	<u>#9</u>	<u>#10</u>
0.31	0.31	0.14

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Hanging Gardens

	<u>#8</u>	<u>#9</u>	<u>#10</u>
	0.36	0.33	0.17
Feed Prep and Extract, 1st Level			0.12
Feed Prep 2nd Level			0.19
Feed Prep 1st Level			0.15
Feed Prep 2nd Level			0.23
Feed Prep 3rd Level			0.20
Evaporator Area			0.23

L. J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

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INTER-COMPANY CORRESPONDENCE

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COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

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DATE October 4, 1955

ANSWERING LETTER DATE

SUBJECT Solvent Air Analysis
for Alloy Division
September, 1955

ATTENTION
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October 4, 1955

Solvent Air Analysis
For the Alloy Division
September, 1955

The following tables give the average concentrations of Solvent Vapor in air for various Alloy Division operations for the month of September. Average concentrations for July and August are included for comparison.

Building 9204-4

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	797	1803	1710
% of Samples equal to or greater than MAC of 0.10 mg/m ³	6	17	13

Areas

Ave. Concentration (mg/m³)

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Bonnet Repair	0.07	0.11	0.06
Bonnet Storage	0.09	0.12	0.12
Chemical Recovery	0.07	0.05	0.05
Flow Control	0.07	0.06	0.05
Blender Stations	0.05	0.07	0.06
Blender Stations (North)	0.03	0.04	0.02
Blender Stations (South)	0.04	0.03	0.03
Feed Prep	0.02	0.03	0.02
Evaporator Feed	0.04	----	0.02
Solvent Purification	0.10	0.15	0.15
Demineralizer	0.06	0.09	----
Lunch Room	----	----	0.03

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Building 9201-2

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	502	997	1158
% of Samples equal to or greater than MAC of 0.10 mg/m ³	41	22	39

<u>Areas</u>	<u>Ave. Concentration (mg/m³)</u>		
	<u>July</u>	<u>August</u>	<u>Sept.</u>
MCTF	0.08	0.08	0.11
PTF	0.10	0.07	0.07
Colex Tray #1	0.06	0.07	0.06
Colex Tray #2	0.10	0.08	0.16
Colex Tray #3	0.15	0.10	0.12
Mechanical Shop	0.09	0.09	0.14
Water Fountain, 2nd Floor	0.03	0.02	0.02
Machine Shop (X-10)	0.02	0.04	0.04
Lunch Room	0.03	0.03	0.11

Building 9201-5

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	3233	4098	6064
% Samples equal to or greater than MAC of 0.10 mg/m ³	88	87	87

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>July</u>	<u>August</u>	<u>Sept.</u>
< 0.10	12	13	13
0.10 - 0.19	25	22	24
0.20 - 0.29	18	18	24
0.30 - 0.39	11	14	17
0.40 - 0.49	10	9	10
0.50 - 0.59	7.5	8	6.7
0.60 - 0.69	5.5	5	2.5
0.70 - 0.79	3.5	3	1.3
0.80 - 0.89	2.3	3	0.8
0.90 - 0.99	1.4	1	0.3
> 1.00	3	4	0.4
	23%	24%	12%

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From the above tabulation the percentage of samples above 0.5 mg/m³ has been reduced. The greatest percentage of samples fall between 0.20 and 0.50 mg/m³.

The average concentrations for the various areas are as follows:

<u>Area</u>		<u>Concentration (mg/m³)</u>		
		<u>July</u>	<u>August</u>	<u>September</u>
Cascade #1	1st Level	0.33	0.53	0.42
	2nd Level	0.58	0.60	0.58
	3rd Level	0.60	0.56	0.47
	4th Level	0.37	0.36	0.24
Cascade #2	1st Level	0.45	0.50	0.31
	2nd Level	0.60	0.64	0.37
	3rd Level	0.42	0.43	0.36
	4th Level	0.28	0.42	0.22
Cascade #3	1st Level	0.28	0.34	0.27
	2nd Level	0.47	0.31	0.34
	3rd Level	0.37	0.27	0.26
	4th Level	0.16	0.29	0.15
Cascade #4	1st Level	0.24	0.24	0.25
	2nd Level	0.33	0.43	0.33
	3rd Level	0.28	0.30	0.28
	4th Level	0.14	0.29	0.17
Cascade #5	1st Level	0.10	0.08	0.11
	2nd Level	0.16	0.10	0.12
	3rd Level	0.28	0.23	0.20
	4th Level	0.13	0.16	0.17
Cascade #6	1st Level	0.16	0.18	0.22
	2nd Level	0.18	0.16	0.20
	3rd Level	0.29	0.31	0.29
	4th Level	0.16	0.27	0.22
Absorber	#1	0.17	0.26	0.31
	#2	0.22	0.25	0.21
	#3	0.26	0.17	0.16
	#4	0.24	0.18	0.16
	#5	0.10	0.13	0.19
	#6	0.44	0.12	0.13
Pump Areas				
1 & 2		0.39	0.61	0.52
3 & 4		0.51	0.58	0.41
5 & 6		0.71	0.60	0.41

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<u>Area</u>	<u>Concentration (mg/m³)</u>		
	<u>July</u>	<u>August</u>	<u>September</u>
Purified Feed Storage	0.79	0.52	0.39
Chemical Recovery	0.56	0.46	0.37
1st Stage Feed Prep	0.22	0.28	0.32
Former 2nd Stage Feed Prep	0.20	0.15	0.43
Mechanical Shop	0.11	0.12	0.11
Instrument Shop	0.08	0.06	0.12
Electrical Shop	0.11	0.06	0.08
Buffalo Pump Repair	0.36	0.28	0.27
Lunch Room	0.09	0.07	0.25
Office Areas	----	----	0.06
Central Control Room	0.04	0.03	0.04
Extract	----	----	0.05

The areas with most significant increase are the former 2nd stage Feed Prep and the new lunch area. Now that Cascade 1 has been split and the for it probably accounts for the increase. The new room due to the fact that the air conditioning is recirculating plus the fact that it is contained in a smaller area than previously may account for its higher level of solvent vapor.

	<u>Building 9201-4</u>		
	<u>July</u>	<u>August</u>	<u>September</u>
Number of Samples taken	2791	4156	7534
% of samples equal or greater than MAC of 0.10 mg/m ³	93	85	88

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>Percent Samples</u>		
	<u>July</u>	<u>August</u>	<u>September</u>
< 0.10	6.4	15	12
0.10 - 0.19	14.6	41	52
0.20 - 0.29	22	29	23
0.30 - 0.39	20.5	9	7.5
0.40 - 0.49	20	4	3.3
0.50 - 0.59	8.8	1.2	0.9
0.60 - 0.69	4.1	0.4	0.8
0.70 - 0.79	1.7	0.2	0.3
0.80 - 0.89	1.3	< 0.1	0.1
0.90 - 0.99	0.4	0.1	< 0.1
> 1.00	0.8	0.1	< 0.1
	17% 2% 2.2%		

From the above distribution pattern it is apparent that control measures being taken in 9201-4 are meeting with some success. Particular since only 13% of the samples taken are above 0.30 mg/m³.

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The average concentrations in mg/m³ for various areas in 9201-4 is as follows:

<u>Area</u>		<u>Concentration (mg/m³)</u>		
		<u>July</u>	<u>August</u>	<u>September</u>
Cascade #7	1st Level	-----	-----	0.29
	2nd Level	-----	-----	0.21
	3rd Level	-----	-----	0.16
	4th Level	-----	-----	0.14
Cascade #8	1st Level	-----	0.20	0.14
	2nd Level	-----	0.23	0.17
	3rd Level	-----	0.19	0.17
	4th Level	-----	0.15	0.16
Cascade #9	1st Level	0.22	0.18	0.15
	2nd Level	0.58	0.25	0.21
	3rd Level	0.37	0.18	0.15
	4th Level	0.40	0.24	0.14
Cascade #10	1st Level	0.33	0.15	0.16
	2nd Level	0.48	0.20	0.20
	3rd Level	0.34	0.17	0.16
	4th Level	0.37	0.22	0.15
Absorber #7		-----	-----	0.10
	#8	-----	0.12	0.15
	#9	0.29	0.17	0.23
	#10	0.31	0.13	0.15
Pump #7		-----	-----	0.29
	#8	-----	0.31	0.33
	#9	0.32	0.31	0.36
	#10	0.24	0.14	0.16
Hanging Garden #7		-----	-----	0.30
	#8	-----	0.36	0.38
	#9	0.37	0.33	0.47
	#10	0.26	0.17	0.20
Evaporator Area		0.25	0.23	0.21
Feed Prep & Extract 1st Level		0.16	0.12	0.14
Feed Prep 2nd Level		0.29	0.19	0.17
" " 1st Level		0.23	0.15	0.14
" " " 2nd Level		0.51	0.23	0.16
" " " 3rd Level		0.38	0.20	0.12
Maintenance Shop (Millwrights)		-----	-----	0.24
" " (Pipe fitters)		-----	-----	0.09
" " Electrical & Instrument		0.13	-----	0.03
Central Control Room		-----	-----	0.40
Control Lab		-----	-----	0.07
Office Area		-----	-----	0.07
Lunch Room		0.20	-----	0.07
* New Location in office area		-----	-----	-----

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Quarterly Urine Program

Data for this program is incomplete at this time. However, from the 600 plus samples already checked the percent over the arbitrary MAC of 0.30 mg/liter is showing no change from the previous two quarters.

L. J. LaFrance

Leo J. LaFrance
Industrial Hygienist
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INTER-COMPANY CORRESPONDENCE

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NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION

Post Office Box Y
OAK RIDGE, TENN.

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DATE November 3, 1955

ANSWERING LETTER DATE

SUBJECT Solvent Air Analysis for
Alloy Division, October,
1955

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The following tables give the average concentrations of Solvent vapor in air for various Alloy Division operations for the month of October.

Building 9204-4

Number of Samples taken 915
% of samples equal to or greater than MAC of 0.10 mg/m³ 17.5

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
Bonnet Repair	0.12
Bonnet Storage	0.15
Chemical Recovery	0.09
Demineralizer	0.14
Flow Control	0.04
Blender Stations	0.05
Blender Stations (North)	0.03
Blender Stations (South)	0.03
Feed Prep	0.05
Solvent Purification	0.08
Lunch Room	0.03

Building 9201-2

Number of Samples taken 813
% of samples equal to or greater than MAC of 0.10 mg/m³ 47

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.12
PTF	0.10
Colex Tray #1	0.10
Colex Tray #2	0.15
Colex Tray #3	0.12
Mechanical Shop	0.19
Water Fountain 2nd Floor	0.04
Machine Shop (X-10)	0.04
Lunch Room	0.11

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Building 9201-5

Number of Samples taken

9052

% samples equal to or greater than MAC of 0.10 mg/m³

85

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m³) % of Samples

<0.10	15	
0.10 - 0.19	39	
0.20 - 0.29	22.7	
0.30 - 0.39	11	
0.40 - 0.49	5.5	
0.50 - 0.59	3.1	
0.60 - 0.69	1.4	
0.70 - 0.79	1.0	
0.80 - 0.89	0.6	6.8
0.90 - 0.99	0.2	
>1.00	0.5	

The percentage of samples above 0.5 mg/m³ has been reduced again this month. The other significant point is that 54% of the samples are below 0.2 mg/m³.

The average concentrations for the various areas in mg/m³ are as follows:

Cascades

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.24	0.23	0.16	0.10	0.15	0.19
2nd Level	0.36	0.33	0.22	0.23	0.09	0.17
3rd Level	0.37	0.25	0.22	0.23	0.14	0.21
4th Level	0.31	0.14	0.15	0.15	0.09	0.14

Absorbers

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.25	0.20	0.18	0.15	0.13	0.16

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.37	0.24	0.54

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Purified Feed Storage	0.32	
Chemical Recovery	0.28	
1st Stage Feed Prep	0.22	
Absorber and	Area for Cascade 1A	0.31
Mechanical Shop	0.14	
Instrument Shop	0.16	
Electrical Shop	0.15	
Buffalo Pump Repair	0.20	
Lunch Room	0.40	
Office Areas	0.08	
Central Control Room	0.08	
Extract	0.04	

Of the above areas the Lunch Room has been exceedingly high during the past month. It is hoped that the proposed ventilation changes will aid in the correction of this situation.

Building 9201-4

Number of samples taken	5686
% of samples equal to or greater than MAC of 0.10 mg/m ³	83

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
< 0.10	17	
0.10 - 0.19	46	
0.20 - 0.29	21	
0.30 - 0.39	7	
0.40 - 0.49	3.7	
0.50 - 0.59	2.0	
0.60 - 0.69	1.4	
0.70 - 0.79	0.8	
0.80 - 0.89	0.4	
0.90 - 0.99	0.3	
> 1.00	0.5	5.4

The above distribution pattern is essentially the same as that for September.

The average concentrations in mg/m³ for the various areas in 9201-4 is as follows:

Cascades

	<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
1st Level	0.15	0.10	0.25	0.26
2nd Level	0.18	0.17	0.22	0.19
3rd Level	0.14	0.18	0.18	0.15
4th Level	0.11	0.14	0.12	

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Absorbers

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.16	0.21	0.26	0.19

Pump Areas

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.17	0.23	0.33	0.18

Hanging Gardens

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.25	0.44	0.53	0.20

Areas

Ave. Concentration (mg/m³)

Evaporator Area	0.15
Feed Prep & Extract 1st Level	0.14
Feed Prep 2nd Level	0.27
Feed Prep 1st Level	0.18
Feed Prep 2nd Level	0.17
Feed Prep 3rd Level	0.13
Maintenance Shop	0.11
Central Control Room	0.28
Office Areas	0.08
Lunch Room	0.10

Leo J. LaFrance
Industrial Hygienist
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INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

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OAK RIDGE, TENN.

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TO
LOCATION

List

DATE December 5, 1955

ANSWERING LETTER DATE

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L. C. Emerson
R. A. Walker
J. W. Ebert
D. G. Hill
C. B. Newman
D. H. Rader
G. W. Flack
L. W. Bagwell

SUBJECT Solvent Air Analysis for
Killey Division, November,
1955

RESTRICTED DATA

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The following tables give the average concentrations of Solvent Vapor in air for various Alloy Division operations for the month of November. Results for the preceding month of October are included for comparison.

Building 9204-4

	<u>October</u>	<u>November</u>
	915	1234
Number of samples taken	17.5	10
% of samples equal to or greater than MAC of 0.10 mg/m ³		
<u>Areas</u>	<u>Average concentration (mg/m³)</u>	
	<u>October</u>	<u>November</u>
Bonnet Repair	0.12	0.06
Bonnet Storage	0.15	0.11
Chemical Recovery	0.09	0.08
Demineralizer	0.14	0.10
Flow Control	0.04	0.03
Blender Stations	0.05	0.06
Blender Stations (North)	0.03	0.03
Blender Stations (South)	0.03	0.03
Feed Prep	0.05	0.03
Solvent Purification	0.08	0.09
Evaporator Feed	----	0.03
Cascades (North)	----	0.05
Cascades (South)	----	0.03
Lunch Room	0.03	0.03

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Building 9201-2

	<u>October</u>	<u>November</u>
Number of samples taken	813	1040
% of samples equal to or greater than MAG of 0.10 mg/m ³	47	59
<u>Area</u>	<u>Average concentration mg/m³</u> <u>October</u>	<u>November</u>
MCTF	0.12	0.13
PTF	0.10	0.11
Colex Tray #1	0.10	0.12
Colex Tray #2	0.15	0.12
Colex Tray #3	0.12	0.09
Mechanical Shop	0.19	0.11
At Water Fountain, 2nd Floor	0.04	0.03
Machine Shop X-10	0.04	0.06
Lunch Room	0.11	0.06

The above table shows a significant decrease in the airborne concentration in the Mechanical Shop and Lunch Room.

Samples were also taken in area of 9201-2 occupied by the Rubber Shop on 11/11 and 11/18/55. Those taken on the 11th showed airborne concentrations of 0.15 in the Vulcanizing Area and 0.10 in the Patching Area. Samples taken at holes and cracks in the floor in both the Vulcanizing and Patching areas ranged from 0.03 - 1.06 mg/m³.

The area was then cleaned and subsequent sampling on the 18th gave airborne concentrations in the Vulcanizing and Patching areas of 0.0 - 0.02 mg/m³. Anchor bolt holes and cracks still showed a fair level of Solvent contamination. If these were filled or sealed it would further reduce the possible Solvent Vapor concentrations.

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Building 9201-5

	<u>October</u>	<u>November</u>
Number of samples taken	9052	7429
% of samples equal to or greater than MAC of 0.10 mg/m ³	85	77

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>October</u>	<u>November</u>
<0.10	15	23
0.10 - 0.19	39	40
0.20 - 0.29	22.7	20.1
0.30 - 0.39	11	6.8
0.40 - 0.49	5.5	4.3
0.50 - 0.59	3.1	2.4
0.60 - 0.69	1.4	1.1
0.70 - 0.79	1.0	0.6
0.80 - 0.89	0.6	0.5
0.90 - 0.99	0.2	0.1
>1.00	0.5	0.9

5.6

It is significant to note that 63% of the samples are below 0.20 mg/m³. This is an increase of 9% over the month of October.

The average concentrations in mg/m³ for various areas is as follows:

<u>Area</u>		<u>Concentration (mg/m³)</u>	
		<u>October</u>	<u>November</u>
Cascade #1	1st Level	0.24	0.20
	2nd Level	0.36	0.33
	3rd Level	0.37	0.20
	4th Level	0.31	0.17
Cascade #2	1st Level	0.23	0.32
	2nd Level	0.33	0.26
	3rd Level	0.25	0.18
	4th Level	0.14	0.14
Cascade #3	1st Level	0.16	0.18
	2nd Level	0.22	0.19
	3rd Level	0.22	0.15
	4th Level	0.15	0.14
Cascade #4	1st Level	0.10	0.20
	2nd Level	0.23	0.23
	3rd Level	0.23	0.21
	4th Level	0.15	0.13

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Area	Concentration (mg/m ³)	
	October	November
Cascade #5 1st Level	0.15	0.16
2nd Level	0.09	0.10
3rd Level	0.14	0.11
4th Level	0.09	0.09
Cascade #6 1st Level	0.19	0.20
2nd Level	0.17	0.19
3rd Level	0.21	0.17
4th Level	0.14	0.12
Absorber #1	0.25	0.18
Absorber #2	0.20	0.13
Absorber #3	0.18	0.17
Absorber #4	0.15	0.11
Absorber #5	0.13	0.10
Absorber #6	0.16	0.09
Pump Area 1 & 2	0.37	0.28
Pump Area 3 & 4	0.24	0.26
Pump Area 5 & 6	0.54	0.70
Purified Feed Storage	0.32	0.28
Chemical Recovery	0.28	0.19
1st Stage Feed Prep	0.22	0.10
and Pump for 1A	0.31	0.24
Mechanical Shop	0.14	0.26
Instrument Shop	0.16	0.11
Electrical Shop	0.15	0.16
Buffalo Pump Repair	0.20	0.15
Lunch Room	0.40	0.31
Office Areas	0.08	0.19
Central Control Room	0.08	0.38
Extract	0.04	0.06

The above table of average concentrations for November does not indicate any significant change for the building as a whole when compared with the October averages.

Building 9201-4

	October	November
Number of samples taken	5686	5734
% of Samples equal to or greater than MAC of 0.10 mg/m ³	83	77

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STEVE WILLEY
10-23-95

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The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>October</u>	<u>November</u>
<0.10	17	23.2
0.10 - 0.19	46	45.5
0.20 - 0.29	21	19.2
0.30 - 0.39	7	6.5
0.40 - 0.49	3.7	3.3
0.50 - 0.59	2.0	1.3
0.60 - 0.69	1.4	0.6
0.70 - 0.79	0.8	0.1
0.80 - 0.89	0.4	0.1
0.90 - 0.99	0.3	0.0
>1.00	0.5	0.4

There is a gain of about 6% in the number of samples below 0.20 mg/m³ over the month of October.

The average concentrations in mg/m³ for the various areas in 9201-4 are as follows:

<u>Area</u>	<u>Average concentration (mg/m³)</u>	
	<u>October</u>	<u>November</u>
Cascade #7 1st Level	0.15	0.12
2nd Level	0.18	0.17
3rd Level	0.14	0.15
4th Level	0.11	0.13
Cascade #8 1st Level	0.10	0.09
2nd Level	0.17	0.14
3rd Level	0.18	0.13
4th Level	0.14	0.11
Cascade #9 1st Level	0.25	0.20
2nd Level	0.22	0.22
3rd Level	0.18	0.18
4th Level	0.12	0.14
Cascade #10 1st Level	0.26	0.21
2nd Level	0.19	0.18
3rd Level	0.15	0.14
4th Level	0.10	0.12
Absorber #7	0.16	0.15
Absorber #8	0.21	0.16
Absorber #9	0.26	0.29
Absorber #10	0.19	0.21
Pump Area #7	0.17	0.17
Pump Area #8	0.23	0.18
Pump Area #9	0.33	0.23
Pump Area #10	0.18	0.18

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<u>Area</u>	<u>Average Concentration (mg/m³)</u>	
	<u>October</u>	<u>November</u>
Hanging Garden #7	0.25	0.36
Hanging Garden #8	0.44	0.34
Hanging Garden #9	0.53	0.30
Hanging Garden #10	0.20	0.23
Evaporator Area	0.15	0.13
Feed Prep & Extract 1st Level	0.14	0.08
Feed Prep 1st Level	0.18	0.14
Feed Prep 2nd Level	0.17	0.18
Feed Prep 3rd Level	0.13	0.12
Maintenance Shop	0.11	0.16
Central Control Room	0.28	0.18
Office Areas	0.08	0.05
Lunch Room	0.10	0.06

Again, as in 9201-5 the above averages do not indicate any significant change from the October averages.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dai

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y OAK RIDGE, TENN.

TO List
LOCATION

DATE January 6, 1956

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray
G. A. Strasser
W. K. Whitson
H. C. McBirney
G. W. Evans
F. V. Tilson
D. A. Jennings
G. R. Jasny
Neal Dow, Jr.
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W. C. Moore
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L. W. Bagwell

File (Y-12RC)

SUBJECT Solvent Air Analysis for
Alloy Division, December,
1955

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The following tables give the average concentrations of Solvent Vapor in air for the various Alloy Division operations for the month of December. Results for October and November are included for comparison.

Building 9204-4

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of samples taken	915	1234	1183
% of samples equal to or greater than the MAC of 0.10 mg/m ³	17.5	10	9

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Bonnet Repair	0.12	0.06	0.10
Bonnet Storage	0.15	0.11	0.08
Chemical Recovery	0.09	0.08	0.12
Demineralizer	0.14	0.10	0.08
Flow Control	0.04	0.03	0.03
Blender Stations	0.05	0.06	0.05
Blender Stations (North)	0.03	0.03	0.04
Blender Stations (South)	0.03	0.03	0.03
Feed Prep	0.05	0.03	0.05
Solvent Purification	0.08	0.09	0.08
Evaporator Feed	-----	0.03	-----
Cascades (North)	-----	0.05	0.04
Cascades (South)	-----	0.03	0.04
Lunch Room	0.03	0.03	0.05

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Building 9201-2

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of samples taken	813	1040	1072
% of samples equal to or greater than the MAC of 0.10 mg/m ³	27	59	30

The distribution of the samples by concentration range for December is as follows:

Less than 0.10 mg/m³

0.10 - 0.19 mg/m³

0.20 - 0.40 mg/m³

70%

27%

3%

AreasAverage Concentration (mg/m³)

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
MCTF	0.12	0.13	0.09
PTF	0.10	0.11	0.08
Colex Tray #1	0.10	0.12	0.09
Colex Tray #2	0.15	0.12	0.11
Colex Tray #3	0.12	0.09	0.08
Mechanical Shop	0.19	0.11	0.05
At Water Fountain, 2nd Floor	0.04	0.03	0.04
Machine Shop X-10	0.04	0.06	0.04
Lunch Room	0.11	0.06	0.07

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Building 9201-5

	Oct.	Nov.	Dec.
Number of samples taken	9052	7429	8379
% of samples equal to or greater than MAC of 0.10 mg/m ³	85	77	77

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m ³)	% of Samples		
	Oct.	Nov.	Dec.
<0.10	15	23	23
0.10 - 0.19	39	40	39
0.20 - 0.29	22.7	20.1	25
0.30 - 0.39	11	6.8	8.4
0.40 - 0.49	5.5	4.3	3.1
0.50 - 0.59	3.1	2.4	0.9
0.60 - 0.69	1.4	1.1	0.4
0.70 - 0.79	1.0	0.6	0.2
0.80 - 0.89	0.6	0.5	0.1
0.90 - 0.99	0.2	0.1	0.1
>1.00	0.5	0.9	0.3

The percentage of samples above 0.50 mg/m³ has been reduced again during December. However the percentage less than 0.20 mg/m³ has remained the same.

AreasAverage Concentration (mg/m³)

		Oct.	Nov.	Dec.
Cascade #1	1st Level	0.24	0.20	0.26
	2nd Level	0.36	0.33	0.30
	3rd Level	0.37	0.20	0.25
	4th Level	0.31	0.17	0.17
Cascade #2	1st Level	0.23	0.32	0.28
	2nd Level	0.33	0.26	0.29
	3rd Level	0.25	0.18	0.20
	4th Level	0.14	0.14	0.15
Cascade #3	1st Level	0.16	0.18	0.17
	2nd Level	0.22	0.19	0.20
	3rd Level	0.22	0.15	0.21
	4th Level	0.15	0.14	0.17
Cascade #4	1st Level	0.16	0.20	0.15
	2nd Level	0.23	0.23	0.23
	3rd Level	0.25	0.21	0.21
	4th Level	0.15	0.13	0.15

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<u>Areas</u>		<u>Average Concentration (mg/m³)</u>		
		<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Cascade #5	1st Level	0.15	0.16	0.13
	2nd Level	0.09	0.10	0.07
	3rd Level	0.14	0.11	0.12
	4th Level	0.09	0.09	0.07
Cascade #6	1st Level	0.19	0.20	0.17
	2nd Level	0.17	0.19	0.08
	3rd Level	0.21	0.17	0.16
	4th Level	0.14	0.12	0.13
Absorber #1		0.25	0.18	0.14
Absorber #2		0.20	0.13	0.20
Absorber #3		0.18	0.17	0.22
Absorber #4		0.15	0.11	0.23
Absorber #5		0.13	0.10	0.09
Absorber #6		0.16	0.09	0.13
Pump Area 1 & 2		0.37	0.28	0.26
Pump Area 3 & 4		0.24	0.26	0.25
Pump Area 5 & 6		0.54	0.70	0.33
Purified Feed Storage		0.32	0.28	0.16
Chemical Recovery		0.28	0.19	0.10
1st Stage Feed Prep		0.22	0.10	0.09
Pump for 1A		0.31	0.24	0.28
Mechanical Shop		0.14	0.26	0.16
Instrument Shop		0.16	0.11	0.12
Electrical Shop		0.15	0.16	0.16
Buffalo Pump Repair		0.20	0.15	0.14
Lunch Room		0.40	0.31	0.31
Office Areas		0.08	0.19	0.07
Central Control Room		0.08	0.38	0.05
Extract		0.04	0.06	0.08
Evaporator		---	---	0.23
		447	882	811

The above tables indicate no significant changes in the averages on the Cascades other than a slight downward trend on Cascade #6. Absorber #1 has shown a progressive decrease during the quarter. pump area for 5 & 6, Purified Feed Storage, Chemical Recovery, and 1st Stage Feed Prep have also shown a decrease over previous averages. The Office Areas and CCR are down from last months average while the Lunch Area remains unchanged.

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	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of Samples taken	5686	5734	7073
% of samples equal to or greater than MAC of 0.10 mg/m ³	83	77	81

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
<0.10	17	23.2	19
0.10 - 0.19	46	45.5	36
0.20 - 0.29	21	19.2	20
0.30 - 0.39	7	6.5	10
0.40 - 0.49	3.7	3.3	6.6
0.50 - 0.59	2.0	1.3	2.7
0.60 - 0.69	1.4	0.6	1.9
0.70 - 0.79	0.8	0.1	1.2
0.80 - 0.89	0.4	0.1	0.8
0.90 - 0.99	0.3	0.0	0.4
>1.00	0.5	0.4	1.8

The increase in the percentage of samples above 0.20 and 0.50 mg/m³ was influenced by the alteration work carried on during December.

The average concentrations in mg/m³ for the various areas in 9201-4 are as follows:

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
	<u>Oct.</u> <u>Nov.</u> <u>Dec.</u>
Cascade #7 1st Level	0.15 0.12 0.09
2nd Level	0.18 0.17 0.14
3rd Level	0.14 0.15 0.16
4th Level	0.11 0.13 0.15
Cascade #8 1st Level	0.10 0.09 0.15
2nd Level	0.17 0.14 0.19
3rd Level	0.18 0.13 0.20
4th Level	0.14 0.11 0.16
Cascade #9 1st Level	0.25 0.20 0.13
2nd Level	0.22 0.22 0.23
3rd Level	0.18 0.18 0.19
4th Level	0.12 0.14 0.19

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<u>Areas</u>		<u>Average Concentration (mg/m³)</u>		
		<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Cascade #10	1st Level	0.26	0.21	0.19
	2nd Level	0.19	0.18	0.24
	3rd Level	0.15	0.14	0.25
	4th Level	0.10	0.12	0.27
Absorber #7		0.16	0.15	0.41
Absorber #8		0.21	0.16	0.31
Absorber #9		0.26	0.29	0.36
Absorber #10		0.19	0.21	0.32
Pump Area #7		0.17	0.17	0.27
#8		0.23	0.18	0.25
#9		0.33	0.23	0.30
#10		0.18	0.17	0.16
Hanging Gardens	#7	0.25	0.36	0.36
	#8	0.44	0.34	0.27
	#9	0.53	0.30	0.44
	#10	0.20	0.23	0.25
Evaporator Area		0.15	0.13	0.12
Feed Prep & Extract 1st Level		0.14	0.08	0.12
Feed Prep 2nd Level		0.27	0.34	0.26
Feed Prep 1st Level		0.18	0.14	0.16
Feed Prep 2nd Level		0.17	0.18	0.19
Feed Prep 3rd Level		0.13	0.12	0.17
Maintenance Shop		0.11	0.16	0.21
Central Control Room		0.28	0.18	0.25
Office Areas		0.08	0.05	0.06
Lunch Room		0.10	0.06	0.14
		740	666	831

There was an increase in the overall average for 9201-4 during December. Contributing Areas were Cascade #10, All Absorber Areas, Pump Area #7 and the Maintenance Shop.

Source Samples

Samples for Solvent Vapor from various suspected sources have been taken in 9201-4 and 9201-5. In 9201-4, 406 samples were taken and 480 in 9201-5 during December.

These samples were around floor drains, cracks in the floors etc., pumps, packing glands, motor drive units, valves, joints, catch buckets, fan rooms, and other miscellaneous pieces of equipment. All showed high levels of contamination or leakage etc. and emphasize the need for stopping leakage and maintaining as high a level of plant cleanliness as possible.

Leo J. LaFrance

Industrial Hygiene

Medical Department

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LJL:dip

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y
OAK RIDGE, TENN.

TO List
LOCATION

DATE February 10, 1956

ANSWERING LETTER DATE

ATTENTION
COPY TO

SUBJECT Solvent Air Analysis for
Alloy Division, January, 1956

J. P. Murray
G. A. Strasser
W. K. Whitson
H. C. McBirney
G. W. Evans
F. V. Tilson
D. A. Jennings
Neal Dow, Jr.
Gordon Grooms
W. C. Moore
H. T. Kite
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J. W. Strohecker
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The following tables give the average concentrations of Solvent Vapor in air for the various Alloy Division operations for the month of January.

Building 9204-4

Number of Samples taken 1633

% of Samples equal to or greater than the MAC of 0.10 mg/m³ 25

The sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
<0.10	75
0.10 - 0.19	20
0.20 - 0.29	3.5
0.30 - 0.39	1.0
0.40 - 0.60	0.5

Areas

	<u>Average Concentration (mg/m³)</u>
Bonnet Repair	0.10
Bonnet Storage	0.12
Chemical Recovery	0.12
Demineralizer	0.12
Flow Control	0.08
Blender Stations	0.08
Blender Stations (North)	0.04
Blender Stations (South)	0.04
Feed Prep	0.06
Solvent Purification	0.11
Cascades (North)	0.03
Cascades (South)	0.03
Lunch Room	0.07

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Building 9201-2

Number of Samples taken 1092

% of Samples equal to or greater than the MAC
of 0.10 mg/m³ 36.5

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	63.5
0.10 - 0.19	33
0.20 - 0.29	3
0.30 - 0.39	0.5

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.11
PTF	0.11
Colex Tray #1	0.12
Colex Tray #2	0.08
Colex Tray #3	0.06
Mechanical Shop	0.05
At Water Fountain 2nd Floor	0.03
Machine Shop X-10	0.04
Lunch Room	0.03
Electrical Shop	0.06
Instrument Shop	0.04

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Building 9201-5

Number of Samples taken

9556

% of Samples equal to or greater than the MAC
of 0.10 mg/m³

69

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	31
0.10 - 0.19	45.6
0.20 - 0.29	16
0.30 - 0.39	5
0.40 - 0.49	1.4
0.50 - 0.59	0.4
0.60 - 0.69	0.3
0.70 - 0.79	0.1
0.80 - 0.89	0.1
0.90 - 0.99	0.1
≥ 1.00	0.2

The percentage of samples above 0.50 mg/m³ was reduced to 1% during January. It is also significant that about 77% of the samples were below 0.20 mg/m³. This is the first time that this has occurred since May, 1955.

The average concentrations for the various areas in mg/m³ are as follows:

	<u>Cascades</u>					
	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.19	0.16	0.13	0.08	0.13	0.18
2nd Level	0.29	0.20	0.19	0.15	0.07	0.09
3rd Level	0.22	0.17	0.18	0.14	0.12	0.15
4th Level	0.13	0.10	0.14	0.12	0.08	0.09

CONFIDENTIAL

ORIGINAL FILE OUT OF ORDER -
LETTER HEADING, AND PAGES
2 THROUGH 4 MISSING FROM
BEGINNING OF THIS DOCUMENT.

STEVE WILEY
10-23-95

Absorbers

<u>#1</u>	<u>#1A</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.10	0.19	0.11	0.17	0.12	0.07	0.08

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.22	0.21	0.18
Purified Feed Storage		0.24
1st Stage Feed Prep		0.09
Instrument Shop		0.17
Buffalo Pump Repair		0.14
Chemical Recovery		0.09
Evaporator Room		0.25
Feed Mixing Area		0.21
Extractors		0.06
Maintenance Shops		0.17
Lunch Room		0.22
Office Areas		0.12
Central Control Room		0.10

461 0.10
681

In line with the sample distribution pattern for 9201-5, there have been some downward trends indicated in various areas while others have remained unchanged.

Building 9201-4

Number of Samples taken 7224

% of Samples equal to or greater than the MAC of 0.10 mg/m³ 72.5

The percentage distribution of these samples in various concentration ranges is as follows:

Building 9201-4
(continued)

CONFIDENTIAL

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
<0.10	27.5
0.10 - 0.19	45
0.20 - 0.29	14
0.30 - 0.39	6
0.40 - 0.49	4
0.50 - 0.59	1.6
0.60 - 0.69	0.7
0.70 - 0.79	0.3
0.80 - 0.89	0.4
0.90 - 0.99	0.2
≥1.00	0.3
	3.5

There has been a reduction in the percentage of samples equal to or greater than 0.50 mg/m³ from the previous month. There has also been an increase in the percentage of samples below 0.20 mg/m³.

The average concentrations for various areas in mg/m³ is as follows:

Cascades

	<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
1st Level	0.08	0.09	0.10	0.12
2nd Level	0.17	0.17	0.19	0.25
3rd Level	0.12	0.17	0.14	0.20
4th Level	0.11	0.17	0.14	0.19

Absorbers

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.13	0.24	0.32	0.14

Pump Areas

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.14	0.23	0.18	0.20

Hanging Gardens

<u>#7</u>	<u>#8</u>	<u>#9</u>
0.20	0.22	0.26

CONFIDENTIAL

Building 9201-4
(continued)

<u>Areas</u>	<u>Average Concentrations (mg/m³)</u>
Evaporator	0.10
Feed Prep and Extract 1st Level	0.06
Feed Prep 2nd Level	0.23
Feed Prep 1st Level	0.08
Feed Prep 2nd Level	0.16
Feed Prep 3rd Level	0.14
Maintenance Shop	0.17
Central Control Room	0.18
Office Areas	0.06
Lunch Room	0.09

There has been a reduction in most areas during January, although a few have stayed at the previous months averages. 38/622

Source Samples

Special sampling to determine sources of high solvent vapor has continued in both 9201-4 and 9201-5. These samples have continued to emphasize the need for controlling leakage and the necessity for a high level of plant cleanliness.

Other Sampling

On January 1, 1956, a large spill of material occurred on the South end of Cascade #6. This situation was sampled to determine how high the air levels were during such a situation. For at least 12 hours after the release concentrations were equal to or greater than 2.5 mg/m³. As the cleaning program progressed the air levels descended by January 4, 1956, to the previous levels obtained in this area during December.

A program of sampling all exhaust outlets from Alpha 5 is in progress and should be complete in the near future. This is to determine with what efficiency the present ventilation is helping to lower the solvent vapor levels in the building.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dip

CONFIDENTIAL

Y/HG-0067
(M-835)

Solvent monthly reports
Building 9201-2
1954

Y/HG-00/Subnumber

- 67/1 Air samples taken during September 1954. West to Murray etal, October 12, 1954. 1p.
- 67/2 Air samples taken during October 1954. West to Murray etal, November 9, 1954. 1p.
- 67/3 Air samples taken during November 1954. West to Murray etal, December 10, 1954. 1p.
- 67/4 Air samples taken during December 1954. West to Murray etal, January 17, 1955. 2p.

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>Y/TS-1560</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>23366-0002</u>	Date of Request <u>7/23/96</u>
Unclassified Title: <u>WEEKLY SOLVENT WORK SHEET - ALPHA 2</u> <u>FOR WEEK OF 12-19-54 (Box # 11-10-3)</u>			

A. (s) Requested by Steve WileyTYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____☐ Journal Article (Identify Journal): _____☒ Other (Specify): To Be Released for Phase II of HSA

Document will be published in proceedings ☒ No ☐ Yes
Document will be distributed at meeting ☒ No ☐ Yes
Document has patent or invention significance ☒ No ☐ Yes (Identify) _____
Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)		DOCUMENT REQUEST APPROVED (Division or Department)	
Title(s): <u>U</u>	Abstract: <u>NA</u>	<u>[Signature]</u>	<u>7/23/96</u>
DOCUMENT: <u>Level U</u>	Category: <u>-</u>	Signature	Date
<u>[Signature]</u>	<u>7/23/96</u>		
Signature	Date	Signature	Date

THE REMAINDER OF THIS FORM TO BE COMPLETED BY THE TECHNICAL INFORMATION OFFICE

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APPROVAL AND RELEASE

Date Received _____	Date Initiated <u>7/23/96</u>	<input type="checkbox"/> Editor <input checked="" type="checkbox"/> Patent Office <u>[Signature]</u> <u>24 July 1996</u> <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____
CLASSIFICATIONS: <u>Unclassified</u>		
Title(s): <u>Unclassified</u>	Abstract: <u>-</u>	
DOCUMENT: <u>Level Unclassified</u>	Category: <u>-</u>	
Weapons Data <u>[Signature]</u>	Signature <u>[Signature]</u>	Date <u>24 July 1996</u>
Y-12 Classification Office		

APPROVED FOR: ☐ Declassification ☐ Release subject to use of the following administrative markings and conditions:☐ Disclaimer ☐ Copyright ☐ Patent Caution ☐ Other

Technical Information Office Date

Comments/Remarks:

LXX
11-10-3

Date 12-21-54

The following air samples were taken during the week ending 12-19-54 to determine the level of solvent contamination in the various areas listed below:

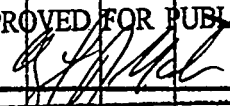
(cont)

9201-22 Location	No. General Air	No. Oper- ational	Total No. Samples	Solvent Air Concentration mg/M ³			Samples > MPL			% Remarks > MPL
				Low	High	Avg.	Gen. Air	Oper.	Total	
Colex Tray #1	15	0	15	0.0	.35	.16	10	0	10	67
Colex Tray #2	9	0	9	.13	.21	.16	9	0	9	100
Colex Tray #3	7	0	7	.07	.31	.18	5	0	5	71
PTF #1	47	0	47	.06	.40	.16	35	0	35	74
1st Floor Aerial PTF #2	3	0	3	.36	.64	.48	3	0	3	100
M.C.T	34	0	34	.09	.30	.18	31	0	31	91
Electrical Shop	5	0	5	.09	.12	.11	4	0	4	80
2nd Floor Development	16	0	16	.03	.06	.04	0	0	0	0
Trap Room in Floor at Col Jrt (1st Floor)	1	0	1	72.10	72.10	72.10	1	0	1	100


APPROVED FOR PUBLIC RELEASE

Technical Information Office

Date

APPROVED FOR PUBLIC RELEASE

 Technical Information Office Date 24 Jan 1966

(over for remarks)

Inspector


11-10-3

(back)

(P. 100 - 101 - 102)

Colo. TROY #1 - solvent pump was turned down at time of sampling. Ventilation in west end of TROY AREA is Excellent, East End Poor.

Colo. TROY #2 & #3 - It is believed that better ventilation would help to lower solvent air concentration in these areas.

PTF #1 The 1st Floor Avg. for this wk. was 2.1; Sol vapors escaping from basement floor are partly responsible for this. & on 13th. there was a large oil spill from pump on Mezz. Floor that upped the count. Also the ventilation on Mezz. Floor & 2nd Floor is inadequate.

1st Floor Area N PTF #2 High count believed to be due to sol. vapors coming from basement floor below. 12.3 & 4 samples were taken in this area not reported in weekly report, the avg. of which was 1.40. This higher count was caused by hot solvent spilled into area from a pump in Mezz. Floor.

M.C.T. Perhaps better ventilation is the answer here, especially on 2nd, 3rd & 4th levels.

Electrical Shop. Opening windows by personnel to permit outside fresh air to enter would correct count in this Area.

Alpha 2 - Weekly Solvent Work Sheet

Box 11-10-3

Date 12-28-87

The following air samples were taken during the week ending 12-27-87 to determine the level of solvent contamination in the various areas listed below:

(front)

9201-2 Location	No. General Air	No. Oper- ational	Total No. Samples	Air Concentration mg/M ³		Solvent Concentration mg/M ³		Samples > MPL		% Remarks > MPL
				Low	High	Low	High	Gen. Air	Oper.	
Colony Tray #1	15	0	15	.01	.19	.08		3	0	30
Colony Tray #2	8	0	8	.09	.33	.16		5	0	53
PTF #1	34	0	34	.09	.29	.16		24	0	71
PTF #2	3	0	3	.04	.13	.08		1	0	33
1st Floor Area North PTF	5	0	5	.29	.61	.45		5	0	100
M.C.T.	34	0	34	.05	.14	.08		4	0	11
Instrument Shop	9	0	9	.02	.04	.03		0	0	0
Electrical Shop	4	0	4	.09	.10	.10		0	0	0
Mechanical Shop	17	0	17	.02	.11	.05		1	0	6
Water Fountain Area	5	0	5	.11	.14	.13		5	0	100
Sub-Basement	10	0	10	.60	72.10	1.02		10	0	100

M.D. Co. Inc.

11-10-3

(back)

Colex Tray #2

Same remarks as last week.

PTF #1

High solvent concentration believed to come from
Sub-Basement Area.

1st Floor Area N PTF #2

Same remarks as reported last week.

Water Fountain Area.

Poor ventilation in this area.

Sub-Basement.

Concentration here caused by solvent on floor
and in ground.

Box

	Ave Conc.	# Samples	# Samples > 0.10
Sub Basement	0.90	9 samples	9
1st Floor area MPTF	0.61	18 samples	18
PTF 1st floor	0.20	35	32
" 1st floor	0.15	35	28
" 2nd floor	0.11	45	25
MCTF 1st floor	0.16	21	16
" 2nd "	0.12	30	18
" 3rd "	0.17	33	29
" 4th "	0.15	18	13
Box Tr. #1	0.13	32	17
" " #2	0.16	26	21
" " #3	0.12	14	6
PTF #2	0.11	7	5
elec Shop	0.10	9	7
rest "	0.03	9	0
veh. "	0.04	17	11
circ Area 2nd F	0.04	16	0
renew office 2nd F	0.04	4	0
Natural gas area	0.10	11	7

0.14

	Soft			Oct			Nov			Dec		
	A	B	C	A	B	C	A	B	C	A	B	C
Colex #1	162	.09	26 ✓	104	.08	20 ✓	107	.08	31 ✓	15	.08	6.40
Colex #2	16	.09	31 ✓	30	.11	50 ✓	53	.17	89 ✓	9	.06	89
Colex #3				6	.15	33 ✓				2	.21	110
MCT	223	.11	49 ✓	306	.12	63 ✓	163	.14	72 ✓	34	.08	21
PTF #1	176	.12	46 ✓	152	.13	43 ✓	124	.14	74 ✓	12	.09	35
PTF #2	44	.15	59 ✓	25	.15	82 ✓	20	.10	40 ✓	4	.12	50
1st Flow NPTK	30	.26	100 ✓	5	.09	20 ✓	22	.23	86 ✓	4	.22	100
Develop Area	121	.02	18 ✓	86	.04	2 ✓	60	.05	2 ✓			
inst 5 hrs	6	.33	100 ✓	5	.16	100 ✓	14	.18	100 ✓	5	.12	6
Dec "				5	.08	0 ✓	4	.19	100 ✓			
rech "	33	.06	0	16	.08	13 ✓	17	.03	0 ✓			
Foreman #2							4	.15	100 ✓	4	.09	25
Water Cont #2							4	.10	25 ✓	6	.16	100
Prod #2				9	0	0 ✓						
1st floor 1st				13	0	0 ✓						
1st floor 2nd							3	.12	100 ✓	1	.07	100

Total Soft: $\frac{322}{811} = 40\%$ $\frac{363}{762} = 48\%$ $\frac{346}{595} = 58\%$ $\frac{317}{514} = 62\%$

NOTE

1776

12/15

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[illegible]

9106-

m. s. 2

G. A. Strasser

G. R. Jasny

JMC, 1-13-71

INTERNAL CORRESPONDENCE

Y/HG-0183

NUCLEAR DIVISION

1971 JAN 14 AM 5 51

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE 37830

To (Name) J. M. Case
 Division Superintendent
 Location Y-12 Plant

Date January 12, 1971

Originating Dept. Thermonuclear Div., ORNL

Answering letter date

Copy to File

Subject Metallic Mercury Vapor
 in Bldg. 9201-2

I enclose a copy of a survey made on November 18, 1970 by the Industrial Hygiene Department of the mercury vapor in 9201-2. In all cases it is equal or less than the "recommended levels."

My concern is documented by two observations substantiated by the other enclosed material (pp. 26, 27 and 33, 34) of the report entitled "N.S.F. Summer Environmental Study. Indices Group Report on: all you may ever want to know about M E R C U R Y," by Wallace, of the Biology Division.

1. Russians have observed pronounced effects in people working at levels to which we in 9201-2 are exposed every day.

2. There is no official standard in the U.S. (p. 33) and the one recommended in Stockholm is lower (0.05 mg/m^3) for vapor than Y-12's (which is uncomfortably close to our levels).

I therefore urge that in keeping with the philosophy adopted here for radiation standards--"as low as practical"--that the basement of 9201-2 be separately ventilated and the large holes between the basement and first floor be sealed adequately. I think these simple steps could reduce the vapor content immensely. Similar steps in other contaminated areas might also be prudent.

It is appalling in retrospect to see how little we know and how inadequately standards seem to be established.

H. Postma
 Thermonuclear Division

HP:hgt

Enclosures (as stated)

APPROVED FOR PUBLIC RELEASE	
Technical Information Office	Date 5/3/94

UNCLASSIFIED

INT. A-LABORATORY CORRESPONDENCE
OAK RIDGE NATIONAL LABORATORY

December 15, 1970

File No. 106.5.2
Description _____
Pages _____
Copies to _____

TO: H. Postma
FROM: R. S. Edwards
Safety and Radiation Officer
SUBJECT: Mercury Contamination Survey

A mercury contamination survey was conducted in Building 9201-2 on November 18, 1970. The attached report indicates that only the basement approaches the danger level. This report in addition to the Health Physics report of December 10, 1970 completes the contamination survey of the building for 1970. A similar survey is planned for the summer of 1971.

RSE/pw

Attachment

cc: Director, X-10 Safety
Director, Y-12 Safety



INDUSTRIAL HYGIENE FIELD SAMPLING REPORT

DATE OF SERVICE TRIP 11/18/70

BUILDING 7201-2 ROUTINE ☐ SPECIAL ☒

REPORT NO. 1100000000
REQUESTED BY C. J. Sullivan

Bldg Survey

SAMPLE NUMBER	SAMPLING LOCATION	SAMPLING		CONTAMINANT	TOTAL mg./m ³	CONCENTRATION	OBSERVATIONS
		TIME	RATE				
1	Basement East			H ₂	.01		
2	" " " S.				.01		
3	" " Center SOUTH				.02		at CIP D-16
4	" " " NORTH				.01		at CIP K-14
5	" " " "				.02		at CIP K-9
6	" " " "				.03		at CIP D-8
7	" " " WEST				.02		at CIP D-3
8	" " " WEST				.03		at CIP K-3
9	1st Floor East				.01		at CIP K-19
10	" " " SOUTH				.01		at CIP D-20
11	" " " CENTER				.01		at CIP D-17
12	" " " "				.02		at CIP D-11
13	" " " WEST				.03		at CIP B-31/2
14	" " " WEST				.02		
15	" " " CENTER				.01		at CIP L-11
16	" " " CENTER				.03		at CIP K-13
17	Basement East				.04		NORTH EAST
18	" " " CENTER				.05		SOUTH " CENTER
19	" " " WEST				.08		NORTH " "
20	" " " CENTER				.07		NORTH WEST
21	" " " "				.1		SOUTH CENTER
22	" " " WEST CENTER				.07		WEST CENTER
							Threshold limit value
							" 10 mg./m ³

m-736

INTRA-LABORATORY CORRESPONDENCE
OAK RIDGE NATIONAL LABORATORY

June 8, 1972

TO: H. Postma
FROM: R. S. Edwards
SUBJECT: Mercury Survey in Building 9201-2

10/25/1

Copies to _____
Y/HG-0241/4

Attached is a copy of the latest mercury survey of Building 9201-2 and the recommendations of the Industrial Hygiene Group.


The highest concentration shown is $40 \mu\text{g}/\text{cm}^3$ which is well below the hazard level of $100 \mu\text{g}/\text{cm}^3$ recommended by government and industrial hygienists and the 1968 International Symposium which convened in Stockholm. The $100 \mu\text{g}/\text{cm}^3$ is also the United Kingdom standard.

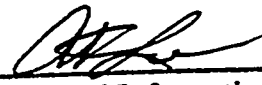
However, all the concentrations in the basement exceed the maximum level set by the U.S.S.R. of $10 \mu\text{g}/\text{cm}^3$ and Germany of $1 \mu\text{g}/\text{cm}^3$. $.3 \mu\text{g}/\text{cm}^3$

Until such time that the level concentration standards are changed, I see no need for further action in decontaminating the building. I do recommend periodic surveys be made to establish that there are no significant changes in the building concentration.

RSE/bw

Attachments



APPROVED FOR PUBLIC RELEASE	
	7/29/74
Technical Information Office	Date

INTRA-LABORATORY CORRESPONDENCE

OAK RIDGE NATIONAL LABORATORY

June 6, 1972

Y/HG-0241/3

TO: Randall S. Edwards

SUBJECT: Mercury Results in Building 9201-2

Attached is a copy of the mercury results in Building 9201-2. The survey was performed on April 4, 1972, by the Y-12 Industrial Hygiene group. The survey indicates that mercury is indeed present but the air concentration is sufficiently low that no hazard is apparent.

I am chasing down the Swedish reference; my plane leaves for Stockholm Monday. I was able to find out that the use of methyl mercury has been banned in Sweden. Additionally there is some information on both water and environmental quality in a publication by the World Health Organization. I will send it to you as soon as I receive it.

I hope this serves your needs for the time being.

N. E. Bolton
N. E. Bolton
Indus. Hyg. Dept.

NEB:js

P.S. I'll need a charge for the trip.

APPROVED FOR PUBLIC RELEASE	
<i>[Signature]</i>	7/29/74
Technical Information Office	Date

INDUSTRIAL HYGIENE FIELD SAMPLING REPORT

REPORT NO.

ROUTINE ☐

SPECIAL ☒

BUILDING 501-2

DATE OF SERVICE 4-04-72

TRIP 4-04-72

REQUESTED BY Dick Jennings

SAMPLE NUMBER	SAMPLING LOCATION	SAMPLING			CONTAMINANT	TOTAL mg/m ³	CONCENTRATION	OBSERVATIONS
		TIME	RATE	VOLUME				
1.	At Ladder				Hg.	.01		
2.	Center of Area					.01		
3.	In ditch center of area					.04		
4.	Near sump " "					.02		
5.	North Center					.02		
6.	North East Center					.01		
7.	East " "					.01		
8.	Southeast " "					.02		
9.	West " "					.02		
10.	Northwest " "					.01		
	1st Floor							
11.	At Ladder				Hg.	0.0		
12.	" Col. K-13					0.0		
13.	" " K-16					0.0		
14.	Battery Storage Area					0.0		
15.	At Col. K-17					0.0		
16.	" " K-19					0.0		
17.	North end					0.04		
18.	Southeast " "					.01		
19.	At Col. D-18					.01		
20.	" " D-14					0.0		

DATE RELEASED

SUPERVISOR

Everett

A. Attilin

m-736



INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE 37830

To (Name) Randall Edwards
Division
Location Bldg. 9201-2

Date March 22, 1976

Originating Dept. Industrial Hygiene

Answering letter date Y/4G-0241/5

Copy to File (NoRC)

Subject Mercury Survey in Basement
of Building 9201-2

The data contained in the attached table indicate the concentration of mercury vapor in various locations of the Building 9201-2 Basement Area. Since no single sample revealed an airborne mercury vapor concentration equal to or greater than the current TLV of 0.05 mg/m^3 , there is not, at this time, any health hazard to personnel entering these areas.

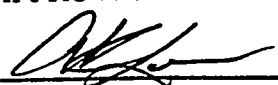
If you have any questions on this survey, please contact me at Ext. 3-5413.

Steve D. Landis

Steve D. Landis
Industrial Hygiene Group

SDL:sc

Attachment

APPROVED FOR PUBLIC RELEASE	
	7/25/94
Technical Information Office	Date

ind 3.0.0.0

2-9045

INDUSTRIAL HYGIENE FIELD SAMPLING REPORT

DATE OF SERVICE TRIP 3/13/76 BUILDING 301-2 ROUTINE ☐ SPECIAL ☒ REPORT NO. 8. LARVIS REQUESTED BY S. LARVIS

SAMPLE NUMBER	SAMPLING LOCATION	SAMPLING			CONTAMINANT	TOTAL mg	CONCENTRATION	OBSERVATIONS
		TIME	RATE	VOLUME				
1	EAST END					1.02		
2	EAST CENTER					1.03		
3	"					1.02		
4	NORTH EAST SIDE					1.02		
5	CENTER NORTH SIDE					1.01		
6	" AREA SOUTH SIDE					1.01		
7	WEST END NORTH					1.01		
8	" " SOUTH					1.02		
9	SOUTH SECTION							
10	SOUTH CENTER					1.02		
11	EAST SOUTH CENTER					1.02		
12	NEAR TANK WELLS					1.03		
13	EAST SIDE @ PUMP HOUSE					1.02		
14	EAST SIDE @ WAREHOUSE					1.02		
15	SOUTH EAST @ STEPS					1.03		
16	SOUTH END @ LARGE AIR DUCT					1.01		
17	SOUTH WEST					1.01		
18	"							
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

0

1.1

Alpha 4

M-590

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1st Reviewer: <u>R. P. [Signature]</u> (Name)	Determination <u>42</u> (Insert Number(s))
Authority: <u>ADC</u> <input type="radio"/> <u>ADD</u> <input type="radio"/>	1. Classification Retained
Date: <u>8-19-94</u>	2. Classification Changed To: <u>CS</u>
2nd Reviewer: <u>R. P. [Signature]</u> (Name)	3. Contains No DOE Classified Information
Authority: <u>ADD</u> <input type="radio"/>	4. Classification Cancelled
Date: <u>2/25/94</u>	5. Classified Information Bracketed
	6. Other (Specify):

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

Classification changed to
Unclassified
(Insert appropriate classification level and category)

by authority of Y/SA-858 8-29-94
(Authority for change in classification) (Date)

by Audrey Wickham 8-30-94
(Signature of person making change) (Date)

Verified by [Signature] 8-31-94
(Signature of person verifying change) (Date)

INVENTORIED SEP 25 1972

April 18, 1960

United States Atomic Energy Commission
Post Office Box E
Oak Ridge, Tennessee

Attention: Mr. C. A. Keller

Subject: TEST FOR MERCURY VAPOR CONCENTRATION AND CO₂ ABSORPTION OF LITHIUM

Gentlemen:

Y-AO-2048

RESTRICTED DATA

DOCUMENT INVENTORIED	
Date	Initials
2/27/62	B76
12/10/64	aba
12/12/65	am
12-20-66	BY
11-2-69	sa
11-2-71	ab
11-2-71	ab
11-2-71	ab

(Y/HG-0515)

Attached is the procedure used for testing anhydrous lithium hydroxide for CO₂ absorption and mercury vapor concentration. The anhydrous lithium hydroxide is used to remove carbon dioxide from the air in submarines. Some results of the application of these tests to various samples of lithium hydroxide are given in the following table:

MMES QA
Y-12 Classification Office
Name: AS Merrill
Date: 10-31-94

Mercury Vapor Concentration	Approximate
Milligrams	Isotopic Assay
per Cu. Meter	Atom % Li-6

Sample Maywood absorbent as received from Mr. W. L. Steiger (contained 0.2 ppm Hg in LiOH by chemical test).

< 0.01	< 10	4.63
--------	------	------

Sample Absorbent packaged by Maywood for U. S. Navy. Sample obtained from Navy (contained 0.1 ppm Hg in LiOH by chemical test).

< 0.01	< 10	7.34
--------	------	------

Sample ADP tails. Drying temperature 260°C.

0.1	100	2.5
-----	-----	-----

Sample ADP tails (contained 6 ppm Hg in LiOH·H₂O by chemical test). Drying temperature 400°C.

< .01	< 10	2.5
-------	------	-----

Sample ADP tails (contained 7 ppm Hg in LiOH·H₂O by chemical test). Drying temperature 400°C.

< .01	< 10	2.5
-------	------	-----

Sample ADP tails (contained 19 ppm Hg in LiOH·H₂O by chemical test). Drying temperature 400°C.

0.07	70	2.5
------	----	-----

UNCLASSIFIED

SECRET

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date 11/18/94

Mr. C. A. Keller

SECRET

April 18, 1960

UNCLASSIFIED

The transfer of mercury from the absorbent to the air is apparently dependent on the CO₂ content of the air. An absorbent sample, when tested with air containing 4% CO₂ by volume as specified in the Navy test, gave a mercury vapor concentration of 0.1 mg/M³. The same absorbent sample, when tested with air containing the normal amount of CO₂ (0.03%), gave a mercury vapor concentration of 0.01 mg/M³. No mercury vapor was detected when air with all the CO₂ removed was tested. It is believed that it is the combination of heat evolved and water vapor liberated by the reaction of CO₂ with the LiOH which causes the mercury to show up in the effluent air.

Material has been produced at Y-12 on a laboratory scale which will meet all the requirements for a carbon dioxide absorbent given in Navy Specification MIL-L-20213C (Ships), 13 February, 1958. The tests described in this specification were also applied to the sample of Maywood material received from Mr. W. L. Steiger and the sample of Maywood material received from the U. S. Navy. Both samples of the Maywood material also passed all tests.

Very truly yours,

UNION CARBIDE NUCLEAR COMPANY

Signed J. P. Murray

J. P. Murray
Y-12 Plant Superintendent

ND:RAW:bfg

Distribution:

Copies 1 - 2: C. A. Keller, w/5 Attach.
3: R. C. Armstrong
4: C. E. Center
5: L. B. Emlet
6: R. A. Walker (Y-12RC)
7: E. Dow, w/1 Attach. ←
8: J. P. Murray

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SECRET



DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. MS/ChR2-0201/DEL REV Author's Telephone No. 6-0263 Acct. No. 2366000 3 Date of Request 10/18/95
 Unclassified Title: SOLVENT: 9201-5 MONTHLY REPORT (2090-1H-4)
Feb '55 only

Author(s) Requestor: Steve Wiley
 TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____
☐ Journal Article (Identify Journal): _____
☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
 Document will be distributed at meeting ☒ No ☐ Yes
 Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
 Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)
 Title(s): U Abstract: -
 DOCUMENT: Level CONFIDENTIAL Category RD
[Signature] 10/19/95
[Signature] 10/19/95
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[Signature] 10/18/95
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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-5

DATE March 10, 1955

ANSWERING LETTER DATE

ATTENTION
COPY TO J. P. Murray J. W. Ebert
W. C. Moore G. W. Evans
W. A. Pfeiler F. V. Tilson
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. R. Kasperek
C. R. Sullivan, M. D. L. C. Emerson
L. J. LaFrance ← File
D. G. Hill

SUBJECT February Solvent Report - Building 9201-5

The following table gives a resume' of the results of spot general air samples taken during the month of February 1955, to determine the solvent air concentration in the areas listed below.

Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	Percent of Samples > MPL of .1 mg/M ³	No. Wks. Avg. Conc. Exc'd MPL
No. 1 Cascade - 1st floor	4	94	.13	60	4
No. 1 Cascade - 2nd floor	4	102	.21	69	3
No. 1 Cascade - 3rd floor	4	102	.16	68	4
No. 1 Cascade - 4th floor	4	102	.10	33	2
No. 2 Cascade - 1st floor	1	18	.08	17	0
No. 2 Cascade - 2nd floor	1	19	.20	79	1
No. 2 Cascade - 3rd floor	1	35	.21	97	1
No. 2 Cascade - 4th floor	1	19	.09	31	0
Feed Storage	4	238	.21	84	4
1st Stage Feed Prep.	4	102	.06	14	1
2nd Stage Feed Prep.	3	63	.15	59	2
2nd Stage Feed Prep. (Pump Area)	2	47	.22	77	2
No. 1 Absorber Bank	2	53	.19	85	2
Elec. and Inst. Shop	2	32	.07	3	0
Mechanical Shop	2	34	.07	12	0
Buffalo Pump Repair Area	1	9	.07	0	0
"E" Fan Area	1	29	.07	34	0
Evaporator	1	17	.07	18	0
Evaporator Storage	1	12	0.0	0	0
Demineralizer	1	16	0.0	0	0

Σ = .118

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

The following gives a resume' of the results recorded by the continuous type air monitors.

Area	Location	Total No. Days Sampled	Avg. Sol. Air Conc. mg/M ³	Percent of Da Exceeding MPL .1 mg/M
No. 1 Cascade	E. wall 1st floor	22	.11	50
No. 1 Cascade	E. wall 2nd floor	24	.17	75
No. 1 Cascade	E. wall 3rd floor	23	.15	70
No. 1 Cascade	E. wall 4th floor	24	.21	92
1st Stage Feed Prep.	W. Titration table	21	.09	24
2nd Stage Feed Prep.	N.W. door and Pump Area	20	.25	70
No. 1 Absorber Room	E. Titration table	20	.15	50
Feed Storage	E. tank 313	20	.18	80

$$\bar{x} = .164$$



C. M. West
Health Physics Department

MS/j

DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS	FROM	THROUGH	CODE NUMBER	
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z	1951	1957	2090-IH-4 Y-12 2090-IH-4	
BOX NUMBER <u>2</u> OF <u>5</u>	LOCATION IN RECORDS CENTER			
CLASS OF FILE	Indef.	SECTION 20	TIER 9	DR. 16
RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>	RECORDS VERIFIED BY: Bill Everett		DATE 2/14/58	
TRANSFER OF RECORD				
T-2078				

CONFIDENTIAL
7-81-5
MURKIN
R. H. T.

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE February 23, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray Neal Dow SUBJECT Weekly Solvent Report
G. W. Flack Carl Frazier Building 9204-4
L. W. Bagwell R. D. Williams
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. Edw. G. Struxness, Y12RC
J. W. Ebert File

g. Y/HG-0081/7
3-2-54

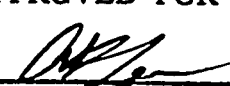
The following air samples were taken during the week ending February 23, 1954, to determine the level of solvent contamination in the various areas listed below:


Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Product Fab.	17	0.0	0.0	0.0	0
Cascade	17	.04	.11	.07	1
Blender Stations	17	.03	.07	.05	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	Column C-15	.04	.06	.05
Feed Purification	7	South wall between tanks F-302 and F-305	.02	.08	.05

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE	
 Technical Information Office	Date <u>4/13/54</u>


 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department

SOLVENT PURIFICATION ROOM

The following irregularities caused the average concentration for this area to be higher than usual:

1. On February 16, the air supply was off for a short period.

2. On February 17, some solvent and sludge were spilled on the floor during the changing of the solvent return line from the south cascade. The air levels could be held down during such changes if all the sludge and solvent could be caught in drums or other containers rather than spilled on the floor.

$\frac{1}{2}$.08

$\frac{4}{4}$.13

Col. G-12

$\frac{5}{11}$ Col. H-14

$\frac{2}{2}$.10

$\frac{3}{3}$.09

E-403

F-402

E-402

F-403

CHEMICAL RECOVERY

LAUNDRY

I-872

Evap.

107

2.07

13
03

17-304

405

ॐ नमः शिवाय

F-851

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE March 2, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray

Neal Dow

SUBJECT Weekly Solvent Report

G. W. Flack

Carl Frazier

Building 9204-4

L. W. Bagwell

R. D. Williams

J. W. Strohecker

C. A. Kasperek

C. R. Sullivan, Jr., M.D. Edw. G. Struxness, Y12RC

J. W. Ebert

File

Y/HG-0081/8

The following air samples were taken during the week ending February 28, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of 0.1 mg/M ³
		Low	High	Avg.	
Product Finishing	32	0.0	0.0	0.0	0
Evap. Feed Room	13	.01	.08	.02	0
Evaporator	17	0.0	0.0	0.0	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical	7	Column C-15	.08	.17	.12*
Feed Purification	7	South wall between tanks F-302 and F-305	.06	.07	.06
Blender Station #20	7	South plant	.04	.06	.05

* The air levels in this area ran high because two highly contaminated solvent pumps were dismantled and repaired during this period.

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

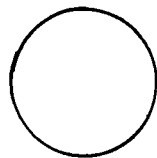
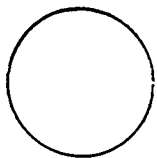
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[Signature] - 4/13/54
Technical Information Office Date

[Signature]
W. H. Baumann

Industrial Hygiene Section
Health Physics Department

SOLVENT PURIFICATION ROOM



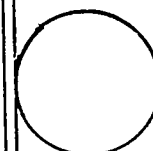
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Col.
H-14
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E-403

F-402

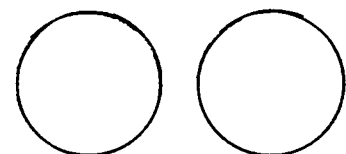
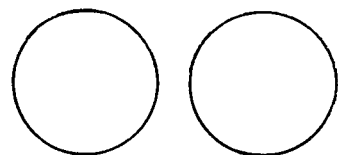
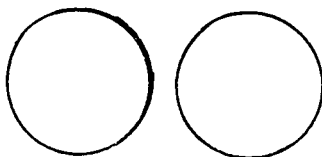
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E-402



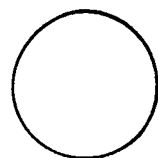
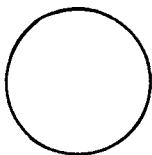
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3
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.06

Col. G-12



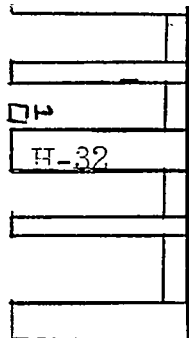
CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

.03



.03

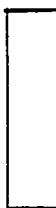
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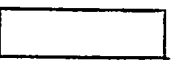
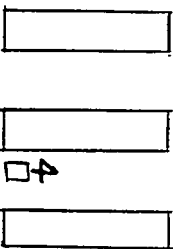
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L-804

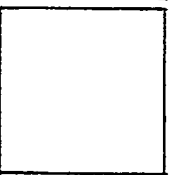


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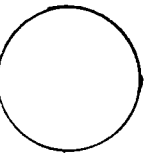
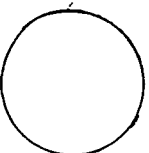
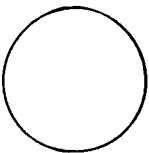
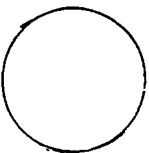


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F-851



INTER- COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE March 9, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray

G. W. Flack

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M. D.

J. W. Ebert

Neal Dow

Carl Frazier

R. D. Williams

C. A. Kasperek

Edw. G. Struxness, Y12RC

File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/9

The following air samples were taken during the week ending March 7, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of 0.1 mg/M ³
		Low	High	Avg.	
Central Control Rm.	10	0.0	.03	.02	0
Tray Control Rm.	34	0.0	0.0	0.0	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg
Mechanical	7	Column C-15	.03	.14	.09
Feed Purification	7	South wall between tanks F-302 and F-305	.03	.09	.07
Blender Station #20	7	South plant	.02	.04	.03

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

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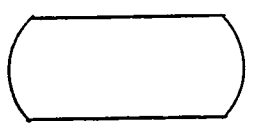
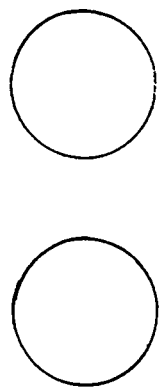
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Technical Information Office Date

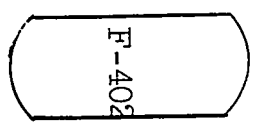
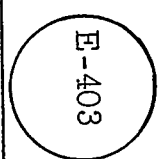
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[Signature]
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

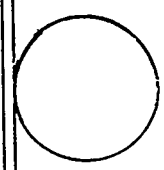
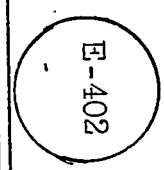
THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY



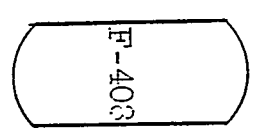
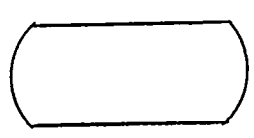
.10 \square ⁵ H Col.
H-14



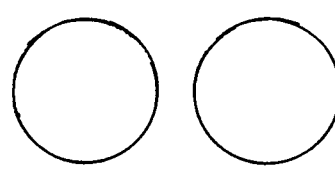
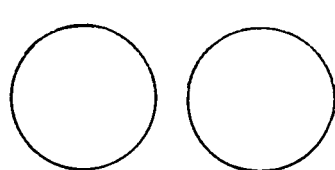
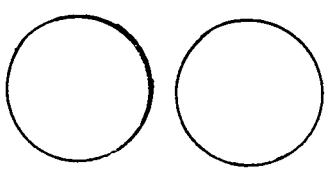
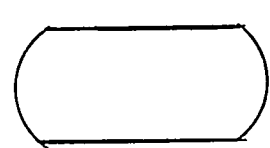
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SOLVENT PURIFICATION ROOM



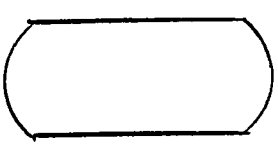
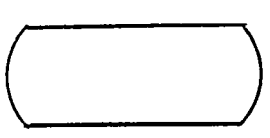
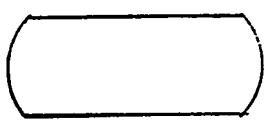
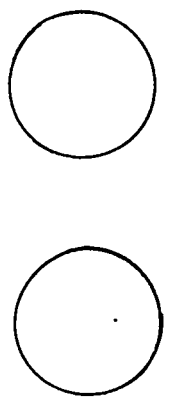
\square ³ .06



\square ⁴ .10

\square ¹ .04

Col. G-12

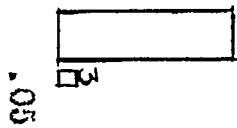
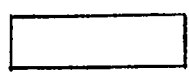
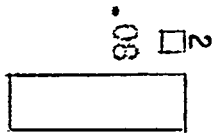
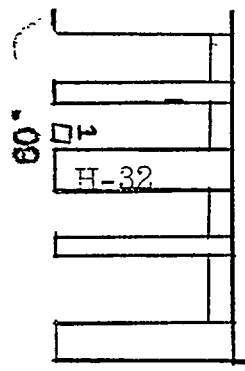


CHEMICAL RECOVERY

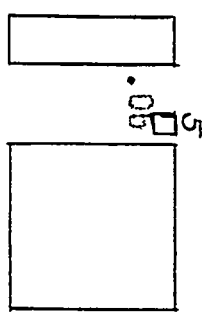
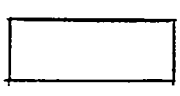
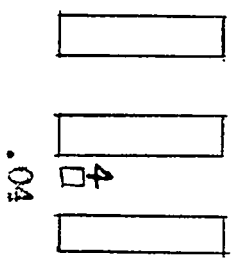
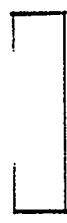
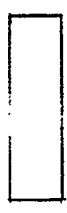
LAUNDRY

L-872

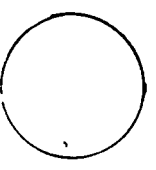
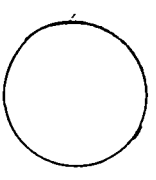
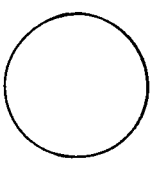
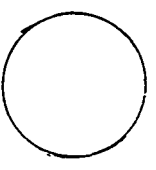
Evap.



L-804



F-851



INTER-COMPANY CORRESPONDENCE

(**INSERT NAME**) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE March 16, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
~~G. W. Flack~~ ~~G. A. Strasser~~
L. W. Bagwell
J. W. Strohecker
C. R. Sullivan, Jr., M. D.
J. W. Ebert

Neal Dow **SUBJECT** Weekly Solvent Report
Carl Frazier Building 9204-4
R. D. Williams
C. A. Kasperok
Edw. G. Struxness, Y12RC
File

Y/4G-0081/10


The following air samples were taken during the week ending March 14, 1954, to determine the level of solvent contamination in the various areas listed below:

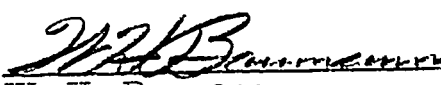
Location	Total # Samples	Solvent Air Conc., mg/M ³			No. of Samples > MPL of 0.1 mg/M ³
		Low	High	Avg.	
Bonnet Repair Area	11	.02	.25	.10	3

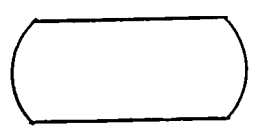
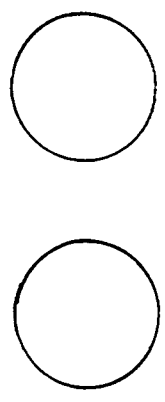
The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc., mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	Column C-15	.02	.09	.06
Feed Purification Rm.	7	South wall between tanks F-302, F-305	.05	.10	.07
Blender Station #20	7	South plant	.02	.10	.04

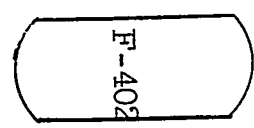
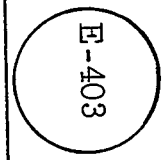
Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE	
 Technical Information Office	Date <u>4/18/54</u>

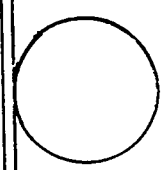
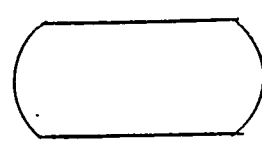
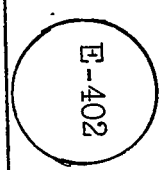

 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department



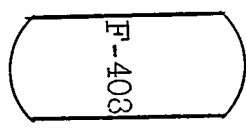
$\frac{5}{10}$ Col. H-14



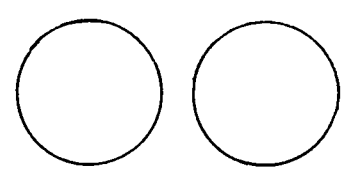
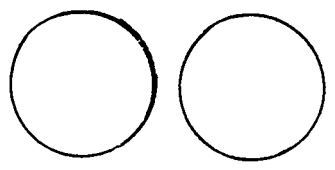
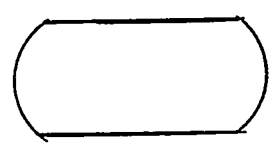
$\frac{2}{10}$.03



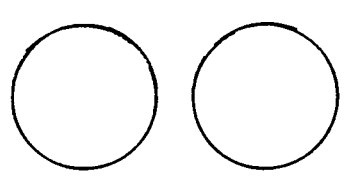
SOLVENT PURIFICATION ROOM



$\frac{3}{10}$.07

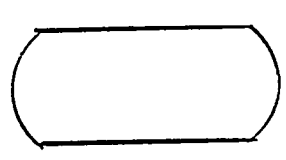
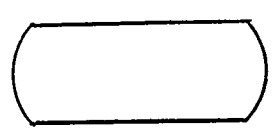
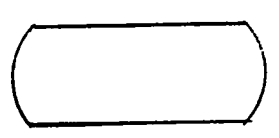
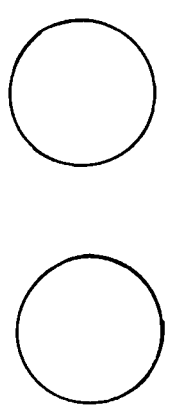


$\frac{4}{10}$.03



$\frac{1}{10}$.05

Col. G-12



LA UNDRY

L-872

h vap.

CHEMICAL RECOVERY

.03

1

H-32

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2

.03

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L-804

.03

4

.03

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F-851

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE March 23, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray

G. A. Strasser

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M. D.

J. W. Ebert

Neal Dow

Carl Frazier

R. D. Williams

C. A. Kasperek

Edw. G. Struxness, Y12RC

File

SUBJECT Weekly Solvent Report

Building 9204-4

Y/HG-0081/11

The following air samples were taken during the week ending March 21, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	17	.02	.06	.04	0
Feed Prep. Rm.	12	.04	.13	.07	1
Blender Station	15	.01	.05	.03	0
Mechanical Shop	12	.02	.08	.05	0
Bonnet Repair Area	13	.03	.17	.10	5

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Ave. Sol. Conc. mg/M ³		
			Low	High	Avg.
Pump Repair	7	Column C-15 (24 hours)	.04	.11	.07
Pump Repair*	3	Column C-15 (8:00 a.m. to 4:00 p.m.)	.07	.17	.11
Feed Prep. Rm.	5	South wall between tanks	.03	.12	.06
Blender Station #20	5	F-302, F-305	.02	.04	.03
		South plant			

* Pumps are repaired in this area from 8-4:30 Monday through Friday.

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date

W. H. Baumann

Industrial Hygiene Section

Health Physics Department

SOLVENT PURIFICATION ROOM

This area ran higher than usual because:

1. Alterations were being made on solvent flow lines during week.
2. Storage tanks F-303 and F-304 were drained.
3. Storage tank F-403 was flushed out.
4. Solvent was added to system.
5. Storage tank F-309 overflowed several times.
6. Cap removed from top of storage tank F-403 caused vapor detector # 5 to average higher than the other detectors.

¹ □ .09

⁴ □ .12

.16 ⁵ □ ^H Col.
H-14

² □ .13

³ □ .10

Col. G-12

CHEMICAL RECOVERY

LA UNDRY

L-872

Evap.

.08

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H-32

.06

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L-804

.06

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.05

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F-851

CHEMICAL RECOVERY

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE March 30, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray

G. A. Strasser

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M.D.

J. W. Ebert

Neal Dow

Carl Frazier

R. D. Williams

C. A. Kasperek

Edw. G. Struxness, Y12RC

File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/12

The following air samples were taken during the week ending March 28, 1954, to determine the level of solvent contamination in the various areas listed below:


Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Evap. Feed Rm.	12	.05	.13	.05	2
Cascade	17	.03	.15	.06	1

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop*	7	Column C-15 (24hrs.)	.03	.17	.11
Mechanical Shop*	5	8 a.m. - 4 p.m. Mon- day - Friday	.15	.26	.20
Feed Prep. Rm	6	South wall between tanks F-302, F-305	.04	.10	.07
Blender Station #20	7	South plant	.05	.06	.05

* The MPL was exceeded in this area because repair work was being done on highly contaminated solvent pumps.

Since a limited amount of maintenance work is done on the night shifts and the week-ends, air contamination in the Mechanical Shop is reported on the 8-4 shift and over the 24hr. period.

APPROVED FOR PUBLIC RELEASE	
 Technical Information Office	Date <u>4/13/54</u>

March 30, 1954

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.



W. H. Baumann
Industrial Hygiene Section
Health Physics Department

GBA:cs

Attachment

SOLVENT PURIFICATION ROOM

The following irregularities caused the solvent concentration in this area to average higher than usual:

1. Solvent pump J-401 was removed and replaced.
2. Solvent pump J-404 was repacked.
3. Air blast blowing against shaft to pump J-403A.
4. Washing-out tank F-403.

Due to construction work, operating personnel was unable to keep the floors and equipment washed down as usual.

.13 ☐ ⁵ H Col.
H-14

☐ ² .11

☐ ³ .07

☐ ¹ .03

☐ ⁴ .11

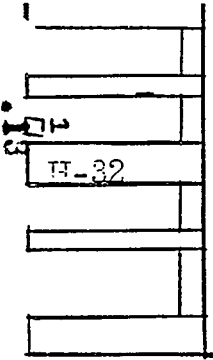
Col. G-12

CHEMICAL RECOVERY

LAUNDRY

L-872

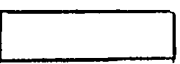
Evap.



2
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.13

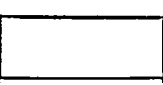
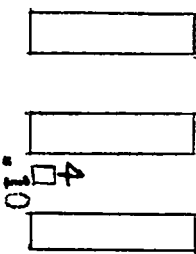


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.00

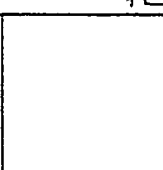


The solvent concentration area ran above the Maximum Permissible Limit (MPL) the first four days during the week. On Friday the lids to the receiving tanks were closed, the floor was washed down and HgX was put on the floor. This action brought the solvent concentration ~~down~~ down to a level well below the MPL.

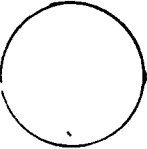
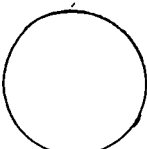
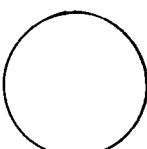
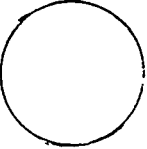
L-804



5
□
.1



F-351



INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE April 6, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray

G. A. Strasser

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC

J. W. Ebert

Neal Dow

Carl Frazier

R. D. Williams

C. A. Kasperek

L. C. Emerson, Y12RC

File

SUBJECT

Weekly Solvent Report
Building 9204-4

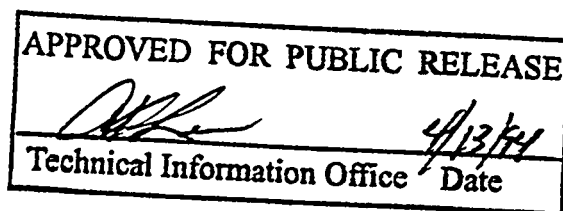
Y/4G-0081/13

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	Column C-15 (24hrs.)	.06	.11	.08
Mechanical Shop*	5	8 a.m. - 4 p.m. Monday - Friday	.10	.24	.15
Feed Prep. Room	7	South wall between tanks F-302, F-305	.03	.09	.06
Blender Station 20	7	South plant	.02	.07	.04

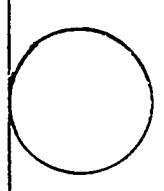
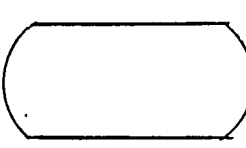
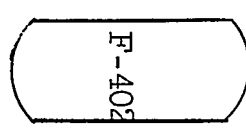
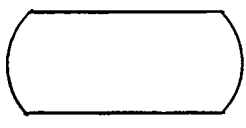
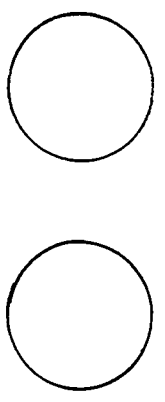
* Since a limited amount of maintenance work is done on the night shifts and the week-ends, air contamination in the Mechanical Shop is reported on the 8-4 shift as well as over the 24hr. period.

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.



W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

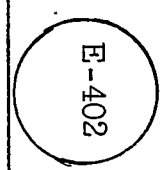
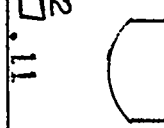
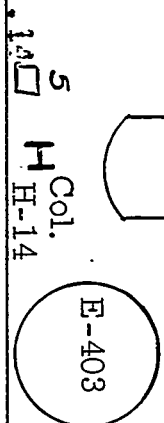
GBA:cs
Attachment (2)



5 Col. H-14

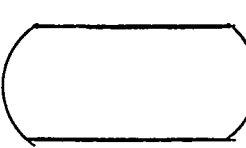
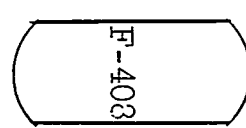
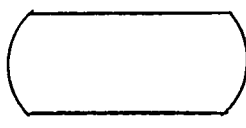
2 .11

3 .03

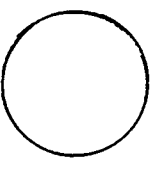
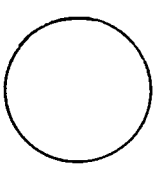
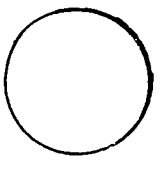


SOLVENT PURIFICATION ROOM

The following incidents caused the high readings, as shown on report, for the solvent purification area for week ending April 4, 1954.



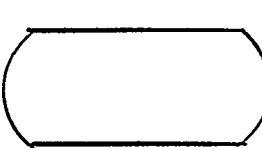
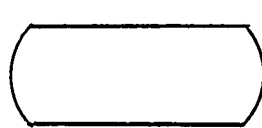
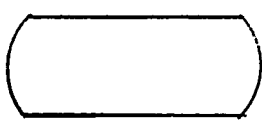
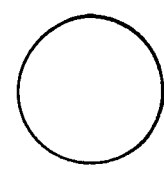
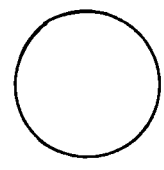
1. Monday - Air supply vent off causing solvent tank to overflow.
2. Tuesday - Cleaned strainer of tank F-403.
3. Wednesday - Re-packed pump J-403.
4. Thursday - Removed and re-packed pump J-404.
5. Friday - Replaced pump J-401A.
6. Saturday - Removed and replaced temporary solvent line from dumper to solvent tank F-402.



1 .19

4 .13

Col. G-12

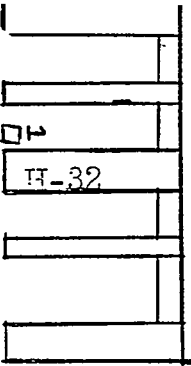


CHEMICAL RECOVERY

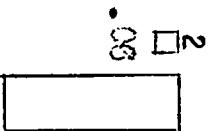
LAUNDRY

L-872

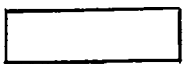
Evap.



.05



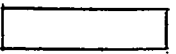
.03



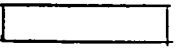
.03



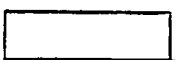
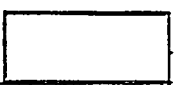
L-804



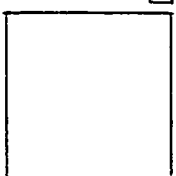
4



.05



.03



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE April 13, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. D. Williams SUBJECT Weekly Solvent Report
G. A. Strasser Neal Dow Building 9204-4
R. F. Hibbs Carl Frazier
L. W. Bagwell C. A. Kasperek
J. W. Strohecker L. C. Emerson, Y12RC
C. R. Sullivan, Jr., MD File
J. W. Ebert

Y/HG-0081/14

The following air samples were taken during the week ending April 11, 1954. to determine the level of solvent contamination in the various areas listed below:

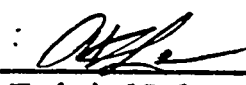
Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Bonnet Repair	12	0.0	.11	.03	1
Bonnet Storage Area	12	.05	.09	.07	0
Mechanical Shop	12	.01	.09	.04	0
Extract	12	0.0	.09	.04	0
*Evaporator Feed Room	26	.05	.31	.12	8
Cascade (North & South)	34	.05	.22	.11	15
Blender Stations	17	.06	.12	.09	4

* The high findings in the Evaporator Feed Room were in the areas near control panels #19 and #6 and sink and titration table as listed below:

	<u>4/5/54</u>	<u>4/8/54</u>
Titration Table	.19 mg/M ³	.15 mg/M ³
Steel Desk	.22	.22
Panel #19	.27	.18
Panel #6	.31	.20

(There was a rubber mat on floor in front of sink when readings were taken on 4/5/54. This was removed before the readings were taken for 4/8/54.


The following table shows the twenty-four hour level of solvent contamination in the various areas.

APPROVED FOR PUBLIC RELEASE	
	4/13/54
Technical Information Office	Date

Area	No Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop*	7	Column C-15 (24hrs.)	.04	.08	.06
Mechanical Shop*	5	8 a.m. - 4 p.m. Monday - Friday	.07	.12	.09
Feed Prep. Room	7	South wall between tanks F-302 and F-305	.05	.16	.08
Blender Station #20	4	South plant	.06	.09	.08

* Since a limited amount of maintenance work is done on the night shifts and the week-ends, air contamination in the Mechanical Shop is reported on the 8-4 shift as well as over the 24-hour period.

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:cs

Attachment (2)

SOLVENT PURIFICATION ROOM

The solvent purification air readings were high for Monday through Friday averaging .15 mg/M³. For Saturday and Sunday the average was .07. The exhaust fan was not in operation from Monday to Wednesday. On Wednesday a new air supply duct was installed in the north side of area and this should aid in lowering the contamination level.

The following incidents occurred between Monday and Friday caused the area to be flooded by solvent and sludge.

1. Two solvent pumps were leaking.
2. Tank F-403 was flushed out and contents carried by floor drain to Chemical Recovery.
3. Tank E-403 disconnected and new intake line installed.

Col. G-12

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Col.
H-14

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H-11

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□.15

E-403

F-402

E-402

F-403

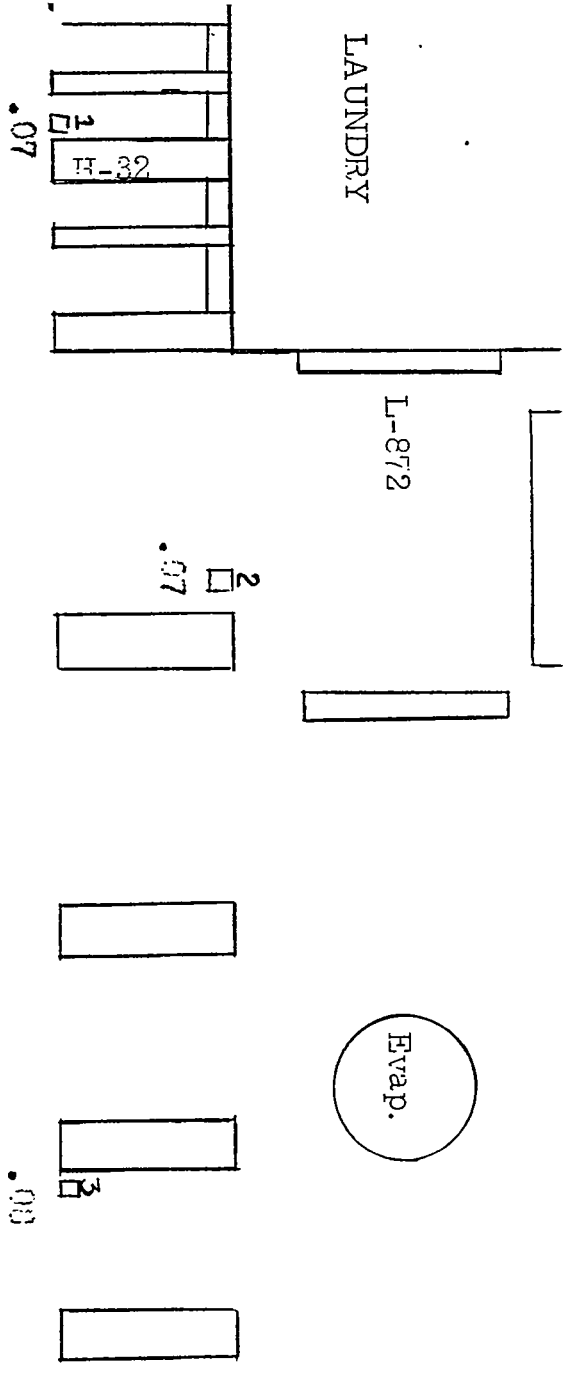
Col. G-12

CHEMICAL RECOVERY

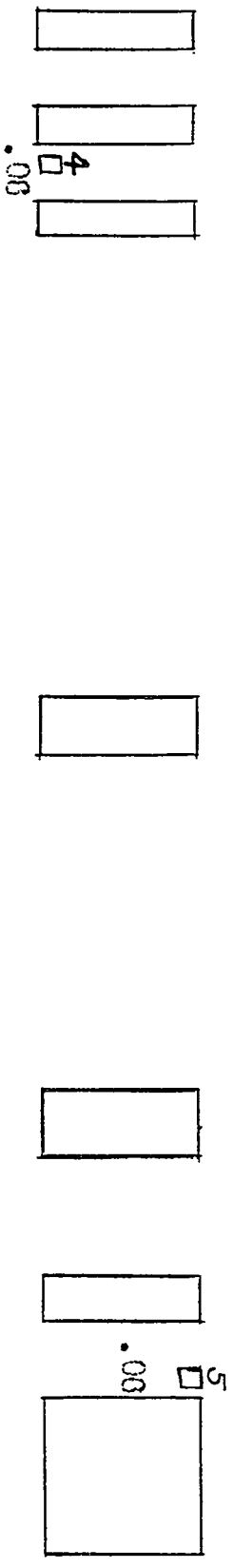
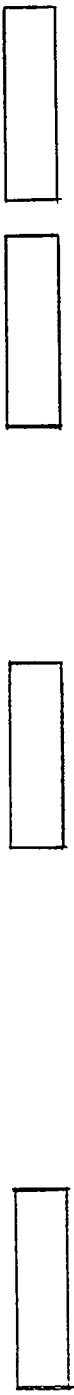
LAUNDRY

L-872

Evap.



L-804



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE April 20, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray Neal Dow SUBJECT Weekly Solvent Report
G. A. Strasser Carl Frazier Building 9204-4
R. F. Hibbs C. A. Kasperek
L. W. Bagwell L. C. Emerson, Y12RC
J. W. Strohecker File
C. R. Sullivan, Jr., M.D.
J. W. Ebert
R. D. Williams

Y/46-0081/15

The following air samples were taken during the week ending April 18, 1954 to determine the level of solvent contamination in the various areas listed below:


Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Flow Control Area	17	0.0	.42	.12	8*
Cascades (lower)	11	.07	.12	.10	5
Blender Stations	15	.04	.62	.19	9**
Cascades (upper)	14	.03	.22	.08	3
Evap. Feed Room	13	.05	.16	.08	2
Product Finishing	33	0.0	.04	< .01	0

* Due to the following conditions, this area ran high.

1. Dry sweeping of solvent during sampling.
2. Draining solvent into an open drain.

** The blender station area ran high because the solvent samples were taken in the vicinity of the solvent water wash drum located on the catwalk between the north and south plant.

The average concentration shown by the permanent monitors in the solvent purification room was 0.1 mg/M³. This is the 5th consecutive week that this average has equaled or exceeded the MPL of .1 mg/M³. The average concentration shown by the permanent monitors in the chemical recovery area was 0.08 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE	
 Technical Information Office	4/27/54 Date

The following table shows the twenty-four hour level of solvent contamination in the various areas.

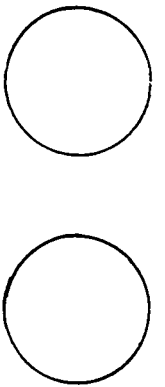
Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop*	4	Column C-15 (24hrs.)	.06	.10	.09
Mechanical Shop*	4	8 a.m. -4 p.m. Monday Friday	.08	.13	.11
Feed Prep. Room	2	South wall between tanks F-302, F-305	.02	.06	.05
Blender Station #20	7	South plant	.08	.13	.11

* Since a limited amount of maintenance work is done on the night shifts and the week-ends, air contamination in the Mechanical Shop is reported on the 8-4 shift as well as over the 24-hour period.

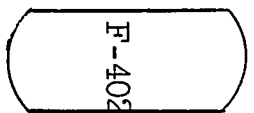


C. M. West
Health Physics Department

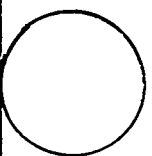
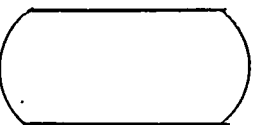
GBA:cs



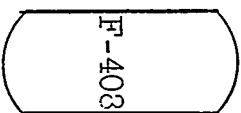
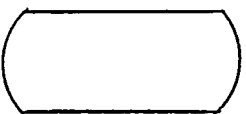
5
Col.
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H-14
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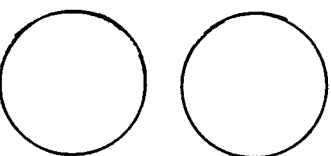
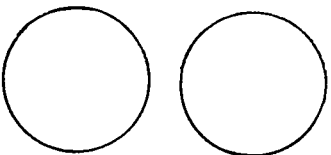
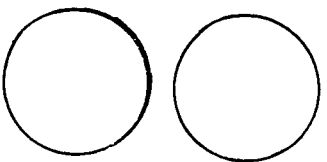
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H
H-11
.11



SOLVENT PURIFICATION ROOM

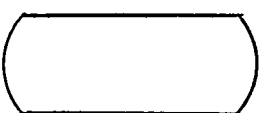
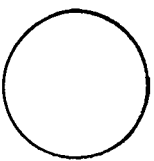
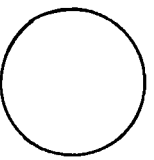


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H-10
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H-08
.08

Col. G-12

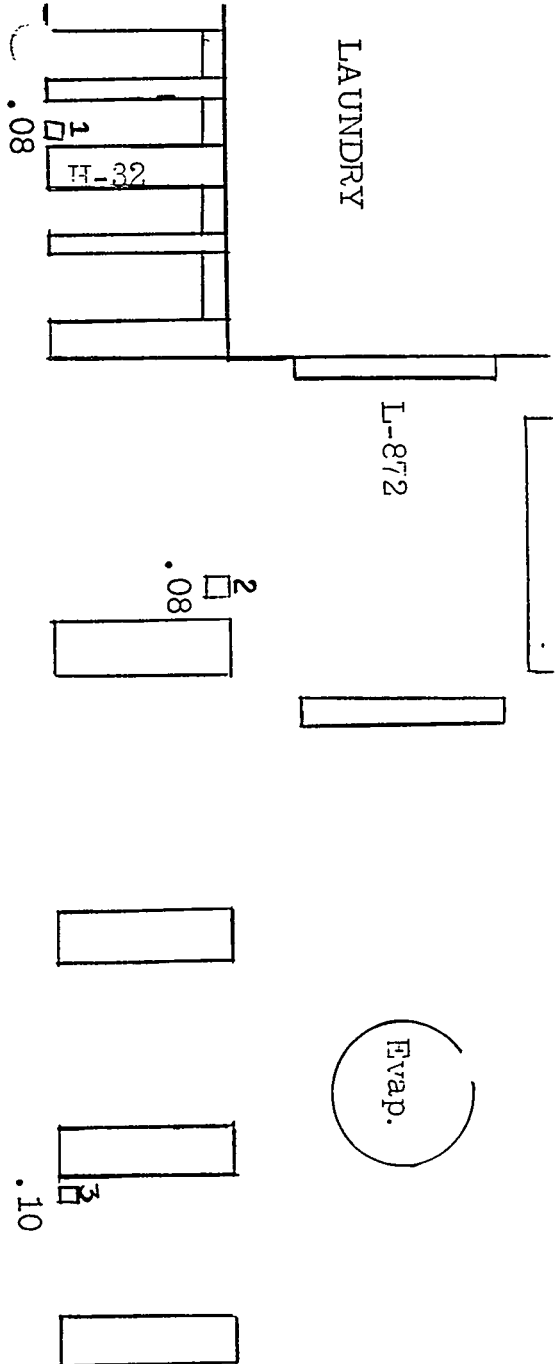


CHEMICAL RECOVERY

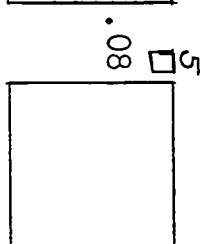
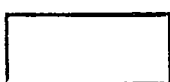
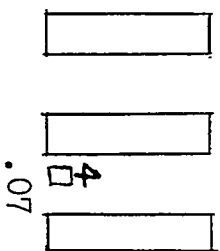
LAUNDRY

L-872

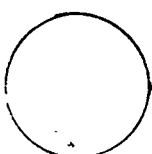
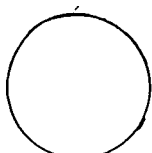
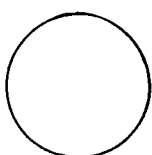
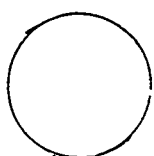
Evap.



L-804



F-351



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

APPROVED FOR PUBLIC RELEASE

TO W. K. Whitson
LOCATION Bldg. 9204-4

ATTENTION

COPY TO

J. P. Murray
G. A. Strasser
R. F. Hibbs
L. W. Bagwell
J. W. Strohecker
C. R. Sullivan, Jr., M.D.
J. W. Ebert

R. D. Williams
H. C. McBirney
Neal Dow
Carl Frazier
C. A. Kasperek
L. C. Emerson, Y12RC
File

SUBJECT Weekly Solvent Report
Building 9204-4

DATE April 27, 1954

Technical Information Office Date

Y/HG-0081/16

The following air samples were taken during the week ending April 25, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Flow Control Area	17	.03	.48	.11	4*
Bonnet Repair	12	.02	.09	.05	0
Cascades (upper)	17	.08	.30	.16	14**
Feed Prep. Room	14	.02	.20	.08	2

* Solvent and sludge flowing into uncovered overflow drum caused the 4 high readings in this area.

** An increase in temperature on the upper cascade is particularly responsible for the MPL being exceeded.

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	5	a. 24hrs. average	.01	.10	.06
	2	b. 8 a.m. -4 p.m. Monday-Friday	.06	.12	.09
Evap. Feed Rm.	2	At column H-3	.03	.08	.06
Blender Station #FS4	3	In cat walk	.18	.22	.22*

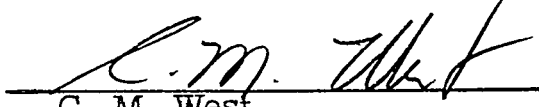
* This solvent air sampler averaged above the MPL (Maximum Permissible Limit) of 0.10 mg³ because it is located near a portable vertical stripper and an un-ventilated storage drum.

W. K. Whitson

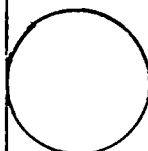
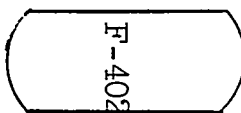
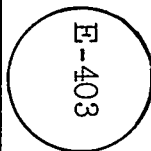
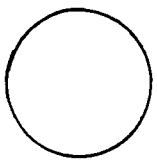
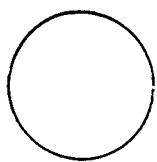
-2-

April 27, 1954

Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:cs

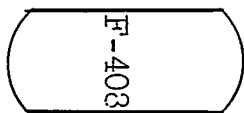



.10  5 Col. H-14

 2 .09


SOLVENT PURIFICATION ROOM

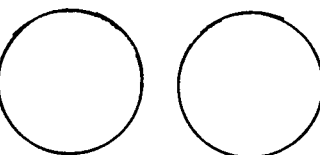
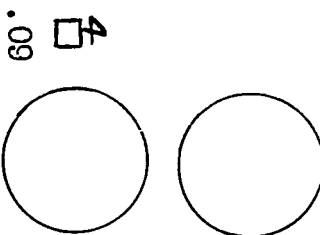
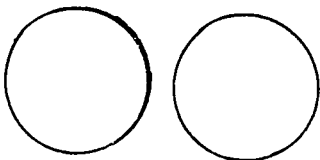
The average concentration shown
by the permanent monitors was
.09 mg/M³.



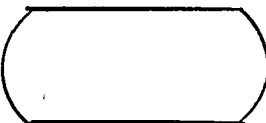
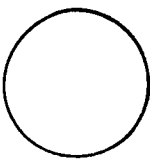
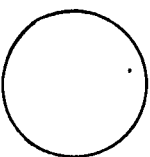
 3 .10



 1 .09



Col. G-12



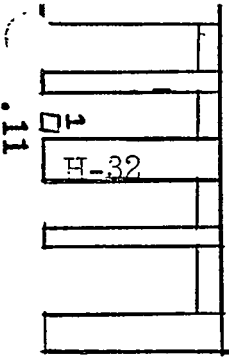
LAUNDRY

L-872

Evap.

CHEMICAL RECOVERY

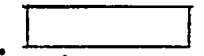
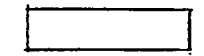
The average concentration shown
by the pergnant monitors was
.08 mg/M³.



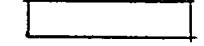
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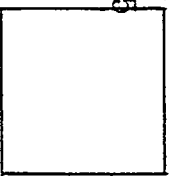
L-804



4
.09

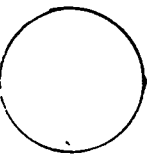
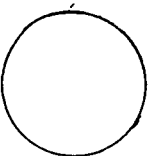
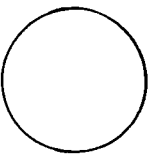
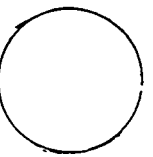


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.05



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F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE May 4, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray R. D. Williams
G. A. Strasser H. C. McBirney
R. F. Hibbs Neal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC
J. W. Ebert File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/17

The following air samples were taken during the week ending May 2, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades (n)	17	.08	.20	.14	12
Blender Stations	31	.03	.20	.11	17
Bonnet Repair Area	16	.01	.09	.04	0
Lunch Room	9	0.0	.06	.04	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop (Pump repair area)	7	a. 24hrs. average	.05	.10	.08
	5	b. 8 hrs. average	.08	.13	.10
Evap. Feed Room	5	At column H-3	.04	.09	.07
FS4 Blender Station	7	In cat walk	.20	.33	.25

The average concentration shown by the permanent monitors in the solvent purification room was .09 mg/M³ and in the chemical recovery area .08 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE

[Signature] 4/13/54
Technical Information Office Date

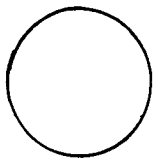
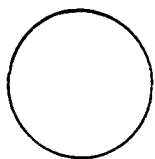
[Signature]
C. M. West
Health Physics Department

GBA:cs

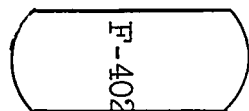
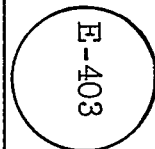
WCX-163 (3-51)

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

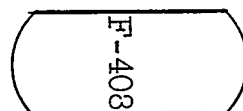
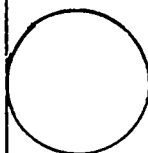
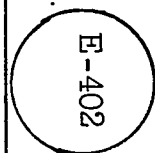
SOLVENT PURIFICATION ROOM



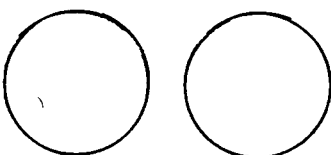
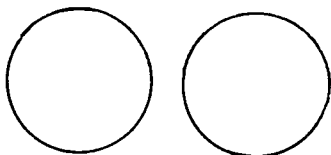
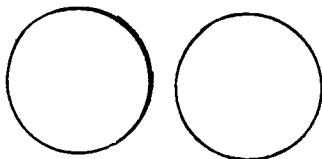
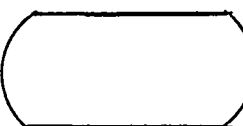
.08 \square $\frac{5}{H}$ Col.
H-14



$\frac{2}{\square}$.05

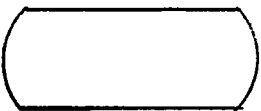
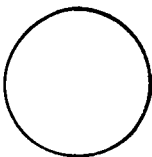
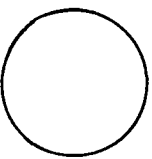


$\frac{3}{\square}$.07



$\frac{1}{\square}$.05

Col. G-12



CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

.10

1

H-32

.08

2

.11

3

.08

5

.11

4

F-351

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE May 13, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/18

The following air samples were taken during the week ending May 9, 1954 to determine the level of solvent contamination in the various areas listed below:

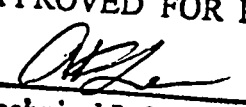
Location	Total No. Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Blender Stations	17	.05	.49	.18	11*
Flow Control	17	.03	.10	.06	0
Bonnet Repair	16	.05	.23	.13	8
Feed Prep. Rm.	13	.03	.10	.07	0
Cascades	48	.02	.31	.11	18**

* Following is a summary of high areas at Blender Stations:

	Sol. Air Conc. (mg/M ³)
FS-4 - Decomposing Drum	.42
FS-4 - Portable Vertical Stripper	.49
FS-4 - Cat Walk Drain	.22
FS-6 - Cat Walk Drain	.39

** Highest areas in Cascades were as follows:

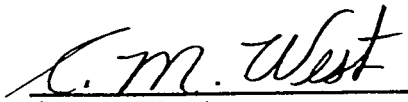
	Sol. Air Conc. (mg/M ³)
DS29 - Verticle Stripper	.31
DN27- Verticle Stripper	.29
Tray 30S - 2	.25
Tray 30R - 4	.23

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date 4/13/54

The following table shows the twenty-four hour level of solvent contamination in the various areas:

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	a. 24 hr average	.04	.08	.06
(Pump Repair Area)	5	b. 8 hrs. average	.04	.09	.07
Evaporator Feed Room	7	Col. H-3	.02	.06	.04
Blender Station, SF-4	7	Cat Walk	.05	.28	.12
Cascades	2	Near Upper Storage Bin	.13	.15	.14

The average concentration shown by the permanent monitors in the solvent purification room was ~~.05~~^{.08} mg/M³ and in the chemical recovery area ~~.08~~^{.08} mg/M³. Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:mc

CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

.09

1
H-32

2
.09

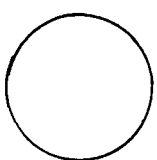
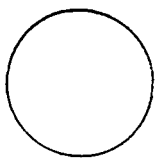
3
.10

L-804

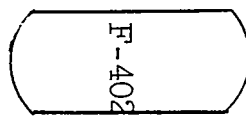
.09

4

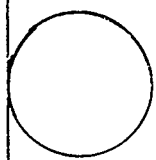
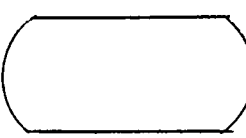
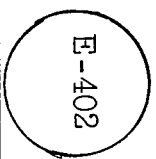
5
.07



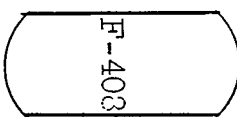
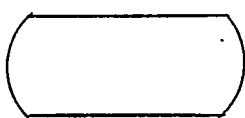
.075
□ H Col.
H-14



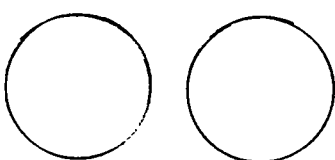
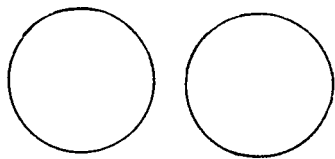
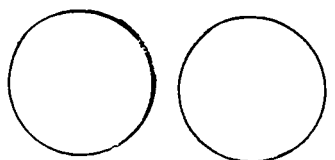
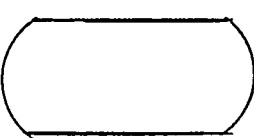
2
□ .05



SOLVENT PURIFICATION ROOM



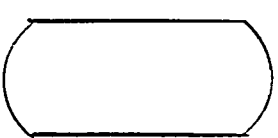
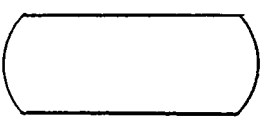
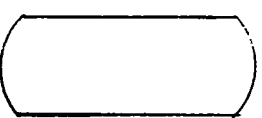
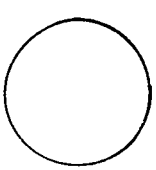
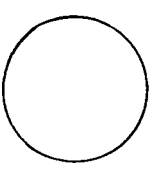
3
□ .06



1
□ .04

4
□ .05

Col. G-12



200 5/24/54
INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE May 18, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. D. Williams
G. A. Strasser H. C. McBirney
R. F. Hibbs Neal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/19

The following air samples were taken during the week ending May 16, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Feed Prep. Room	16	.04	.13	.06	1
Blender Stations	34	.03	.18	.07	4
Extract	11	.04	.09	.06	0
Flow Control	17	.04	.19	.09	4
Bonnet Shop	33	.05	.16	.07	8
Cascades	51	.05	.13	.07	2

The following table shows the twenty-four hour level of solvent contamination in the various areas.


Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	a. 24hrs. average	.03	.06	.04
	5	b. 8hrs. average	.05	.08	.06
Evap. Feed Room	7	At column H-3	.03	.06	.04
FS4 Blender Station	7	In cat walk	.03	.08	.05
Cascades		Upper at storage bin	Out of order		

APPROVED FOR PUBLIC RELEASE

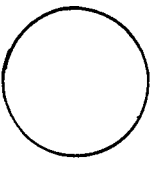
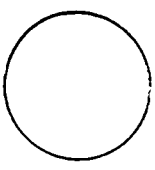
[Signature] 4/13/54
Technical Information Office Date

May 18, 1954

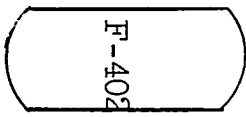
The average concentration shown by the permanent monitors in the solvent purification room was .05 mg/M³ and in the chemical recovery area..10 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:cs

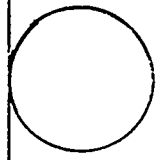




E-403




F-402

E-402



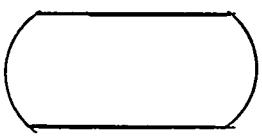
.06  5  Col.
H-14


 2
.05

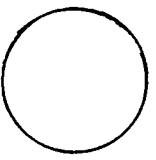
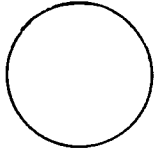
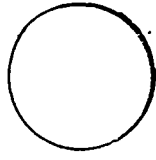
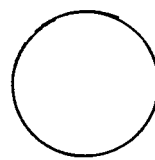
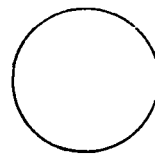
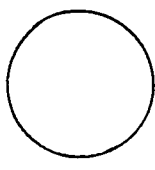
SOLVENT PURIFICATION ROOM




F-403



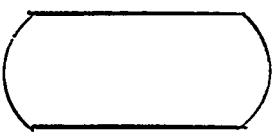
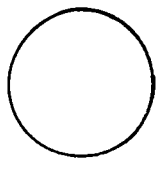
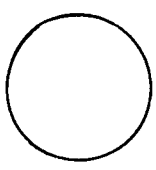
 3
.05



 4
.04

 1
.05

Col. G-12

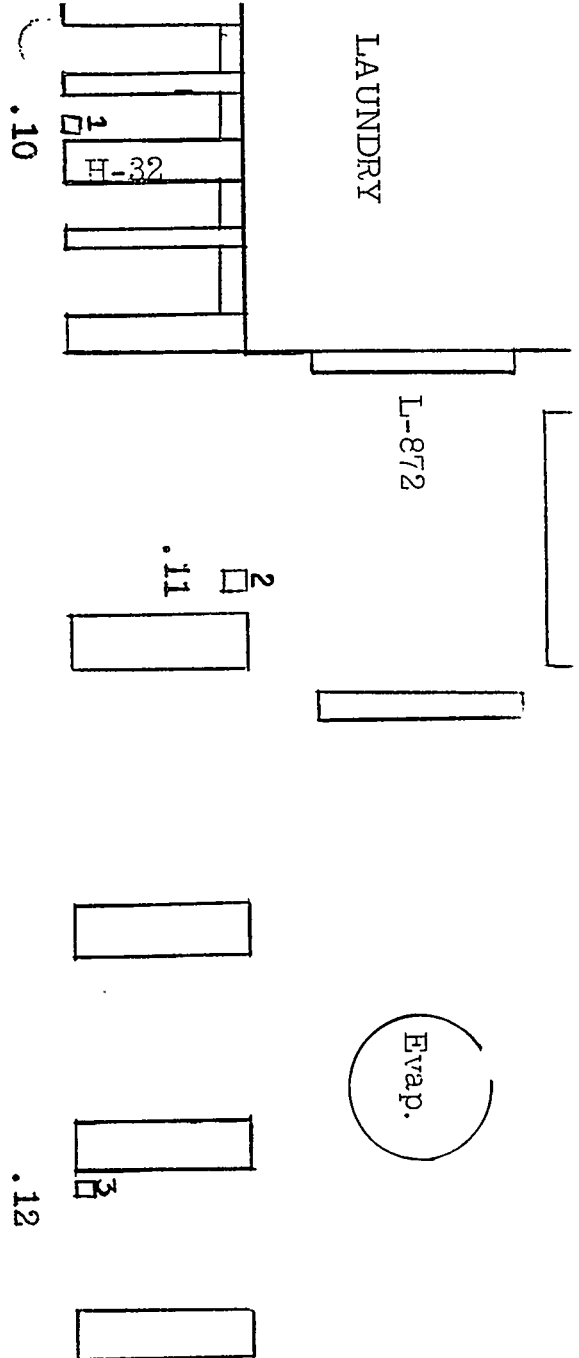


CHEMICAL RECOVERY

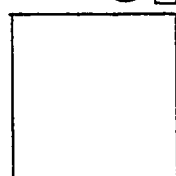
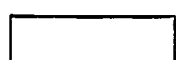
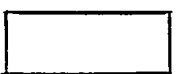
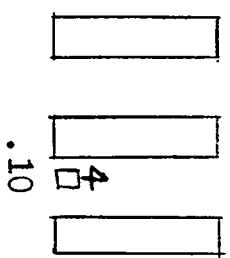
LAUNDRY

L-872

Evap.

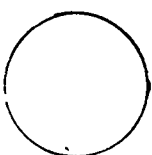
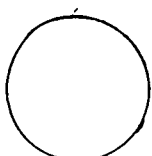
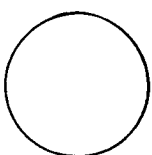
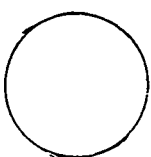


L-804



5
.09

F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE May 25, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/20

The following air samples were taken during the week ending May 23, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			Per Cent > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades	34	.02	.08	.06	0
Blender Stations	87	0.0	.30	.10	33
Bonnet Repair	15	.05	.19	.08	13
Tray Control Rm. (e)	18	0.0	0.0	0.0	0
Tray Control Rm. (w)	17	0.0	.03	.01	0
Central Control Rm.	12	0.0	0.0	0.0	0
Flow Control	17	.04	.17	.09	47
Sol. Purification * (new addition)	14	.02	.30	.12	36
Chemical Recovery**	28	.04	.54	.13	50

* In the new addition to the solvent purification area the readings were taken while a crew was cleaning up solvent spills and before the new area floor has been washed down.

** In the chemical recovery area the high readings were as follows:
Over dirty baffles - .54 Over sink column 19 - .19
At evaporator - .21

The following table shows the twenty-four hour level of solvent contamination in the various areas.

APPROVED FOR PUBLIC RELEASE


Technical Information Office Date

May 25, 1954

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	6	a. 24hrs. average	.03	.05	.04
	5	b. 8hrs. average	.04	.08	.05
Evap. Feed Rm.	6	At column H-3	.03	.05	.04
Blender Station	7	In cat walk	.03	.09	.06
FS4	6	Upper at storage bin	.07	.25	.15*
Cascades					

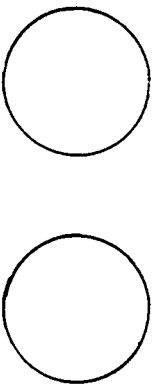
* This portable solvent vapor detector is located in an area where contaminated materials and equipment are stored. The level of contamination indicated by this detector is representative of the storage area and not the entire upper cascade.

The average concentration shown by the permanent monitors in the solvent purification room was .06 mg/M³ and in the chemical recovery area .09 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery area which show the location and weekly average of the individual permanently installed solvent detectors.

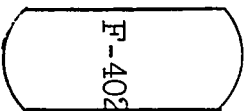

C. M. West
Health Physics Department

GBA:cs

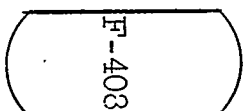
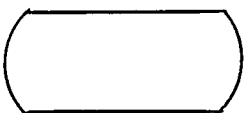
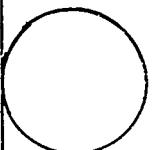
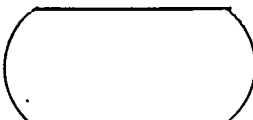
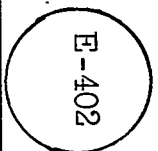
SOLVENT PURIFICATION ROOM



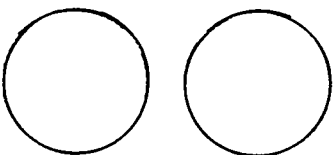
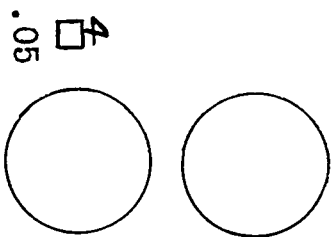
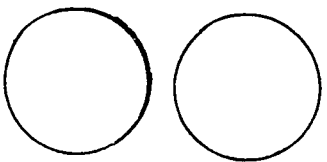
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Col.
H-14
.07



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.06

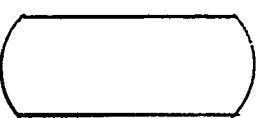
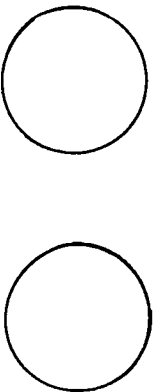


3
.05



1
.05

Col. G-12

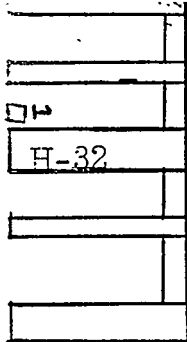


CHEMICAL RECOVERY

LA UNDRY

L-872

Evap.

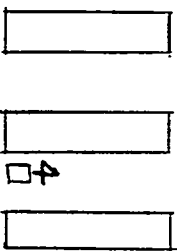
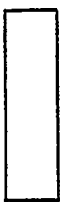


.03

.11

.09

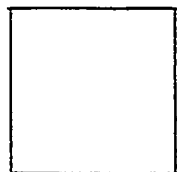
L-804



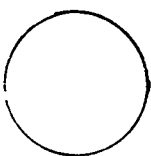
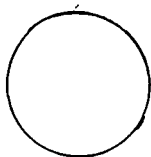
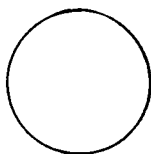
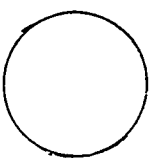
.08



.09



F-851



INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE June 3, 1954

ANSWERING LETTER DATE

ATTENTION

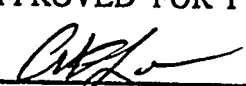
COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Seal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/21

The following air samples were taken during the week ending May 30, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades	66	.02	.28	.07	6
Feed Prep.	17	.02	.12	.06	6
Flow Control Area	17	.06	.15	.09	35
Blender Stations	16	.08	.29	.15	75**
Chemical Recovery	26	.06	.29	.15	81*
Solvent Room	17	.06	.19	.10	29
Bonnet Storage	15	.03	.17	.08	27
Bonnet Repair	17	.02	.16	.08	12

* In the Chemical Recovery Area the high readings were as follows:

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	4/13/54
Technical Information Office	Date

Location	mg/M ³
At water wash L 801	.29
At sink column H 39	.21
At sink L 874	.19
At sink L 872	.21

** Contaminated floors are responsible for the high general air readings in this area.

The following table shows the twenty-four hour level of solvent contamination in the various areas.

- continued on page 2 -

June 3, 1954

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	5	A. 24 hrs. avg.	.03	.05	.04
	4	B. 8 hrs. avg.	.03	.05	.04
Evap. Feed Rm.	6	At column H-3	.02	.05	.04
Blender Station					
FS4	6	In cat walk	.05	.09	.07
Cascades	6	Upper, at storage bin	.10	.18	.14

The average concentration shown by the permanent monitors in the solvent purification room was .07 mg/M³ and in the chemical recovery area .09 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.



C. M. West
Health Physics Department

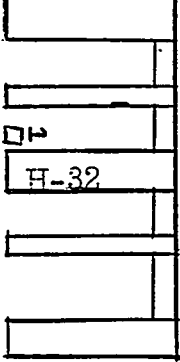
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CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.



.09

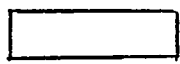
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2

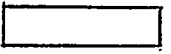
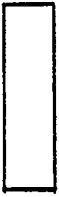


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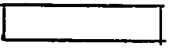
.09



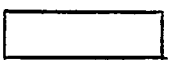
L-804



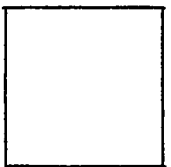
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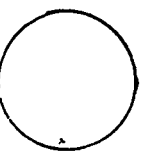
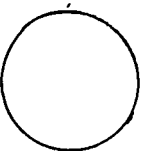
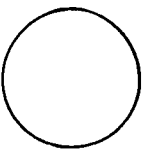
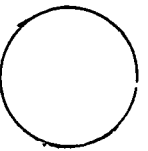
.09



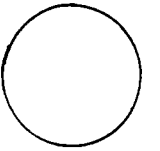
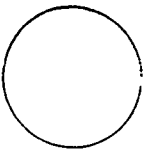
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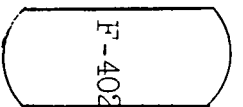
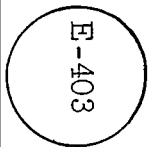
F-851



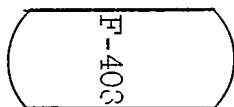
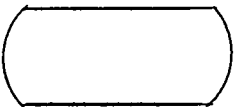
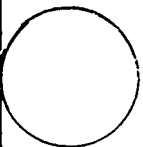
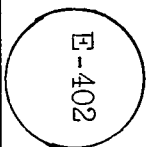
SOLVENT PURIFICATION ROOM



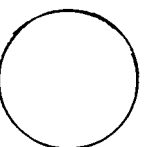
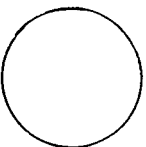
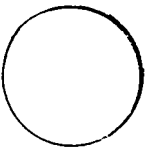
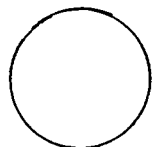
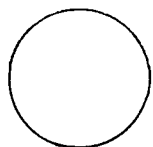
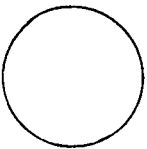
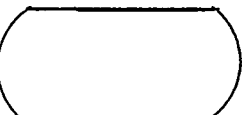
5 H Col.
H-14



2 .v6



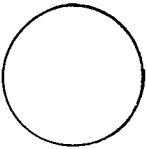
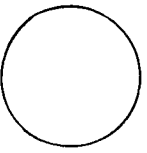
3 .08



4 .07

1 .05

Col. G-12



INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE June 8, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Carl Frazier
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/22

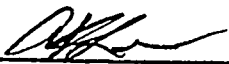
The following air samples were taken during the week ending June 6, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			Per Cent > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades	98	.02	.20	.09	30
Feed Prep. Area	16	.03	.09	.05	0
Flow Control Area	17	.04	.16	.08	6
Blender Stations	34	.06	.16	.08	6

The following table shows the twenty-four hour level of solvent contamination in the various areas.

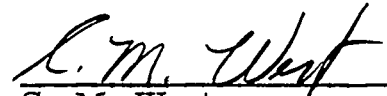
Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Bonnet Repair Shop	3	Next to stripping table	.07	.08	.07
Evaporator Feed Room	7	Column H3	.03	.05	.04
Blender Station FS4	6	In cat walk	.03	.05	.04
Cascades*	3	Upper at storage bin	.08	.11	.10

* This recording vapor detector has been moved from the east end of the maintenance storage cabinet to the west end and the findings should be more representative of the general solvent air concentration on the upper cascade.

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date 4/13/74

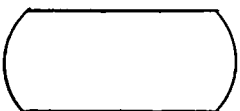
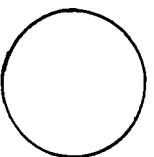
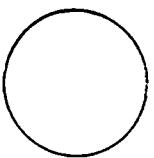
June 8, 1954

The average concentration shown by the permanent monitors in the solvent purification room was .08 mg/M³ and in the chemical recovery area .07 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.

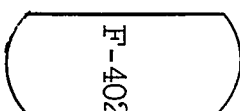
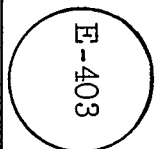

C. M. West
Health Physics Department

GBA:cs

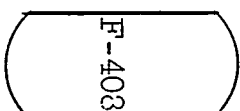
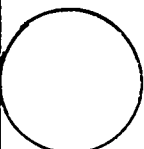
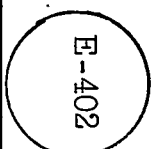
SOLVENT PURIFICATION ROOM



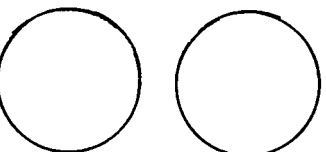
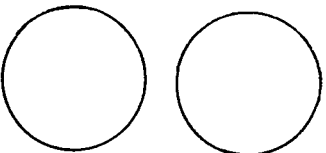
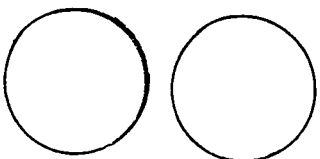
.695
□ H Col.
H-14



2
□ .09

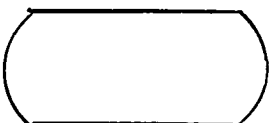
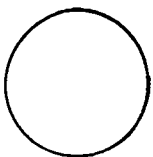
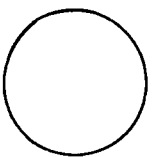


3
□ .07



.084
□

2
□ .116
Col. G-12

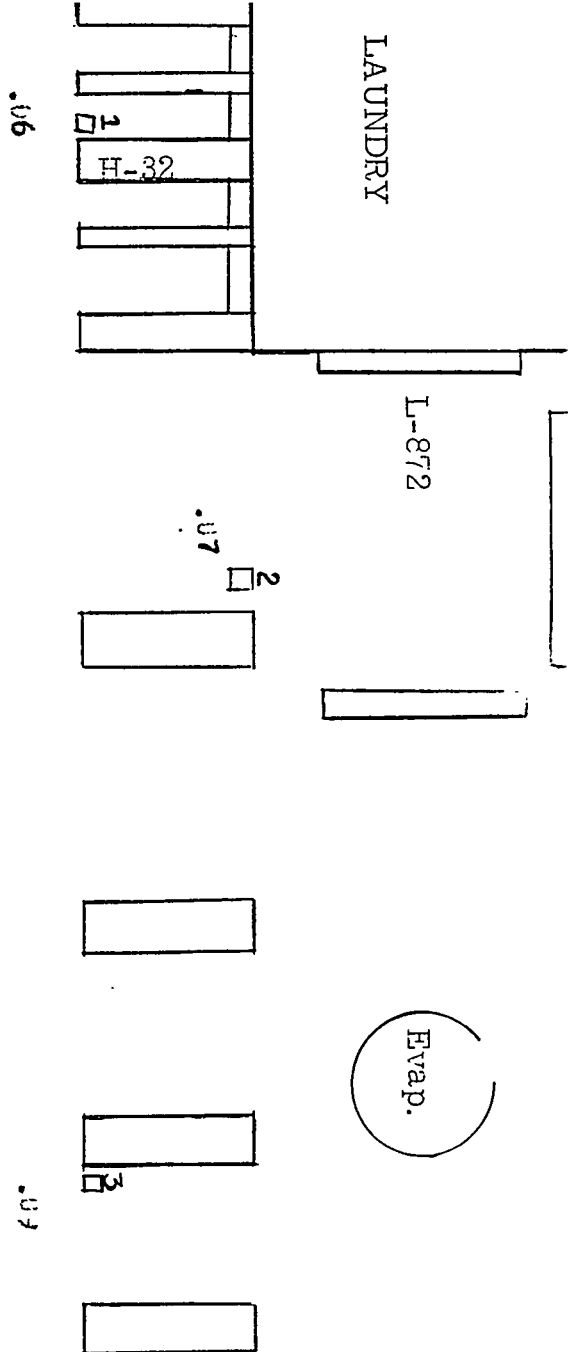


CHEMICAL RECOVERY

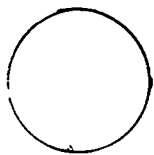
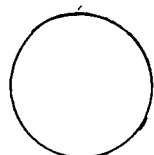
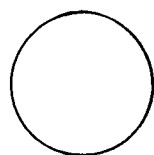
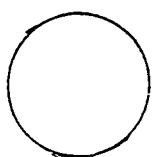
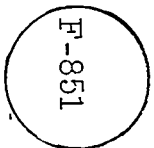
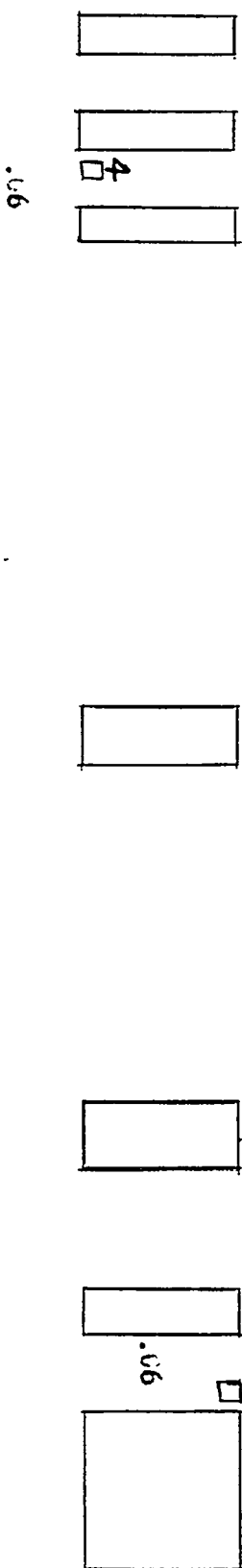
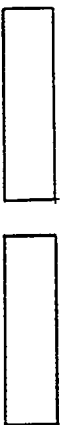
LAUNDRY

L-872

Evap.



L-804



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitsom
 LOCATION Bldg. 9204-4
 ATTENTION J. P. Murray
 COPY TO G. A. Strasser
 R. F. Hibbs
 L. W. Bagwell
 J. W. Strohecker
 C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC
 J. W. Ebert

APPROVED FOR PUBLIC RELEASE
 DATE 4/13/54
 ANSWERING LETTER DATE
 SUBJECT Weekly Solvent Report Building 9204-4

Technical Information Office

Y/HG-0081/23

The following air samples were taken during the week ending June 13, 1954 to determine the level of solvent contamination in the various areas listed below:

Location - 9204-4	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Flow Control Area	17	.06	.11	.08	6
Feed Preparation	17	.01	.05	.02	0
Demineralizer	16	.04	.12	.07	13
Cascades	98	.04	.17	.10	40
Blender Stations	64	.03	.13	.07	14

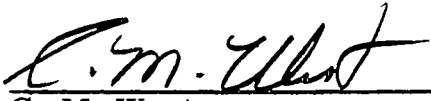
The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Bonnet Repair Shop	7	A. 24 hrs. avg.	.06	.10	.08
	3	B. 8 hrs. avg.	.04	.11	.08
Evap. Feed Rm.	7	At column 3	.04	.07	.06
Blender Station FS4	7	In cat walk	.03	.10	.07
Cascades	7	Upper, at storage bin	.09	.16	.13

(continued on page 2)

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

The average concentration shown by the permanent monitors in the solvent purification room was .07 mg/M³ and in the chemical recovery area .11 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:mcm

CHEMICAL RECOVERY

LAUNDRY

I-872

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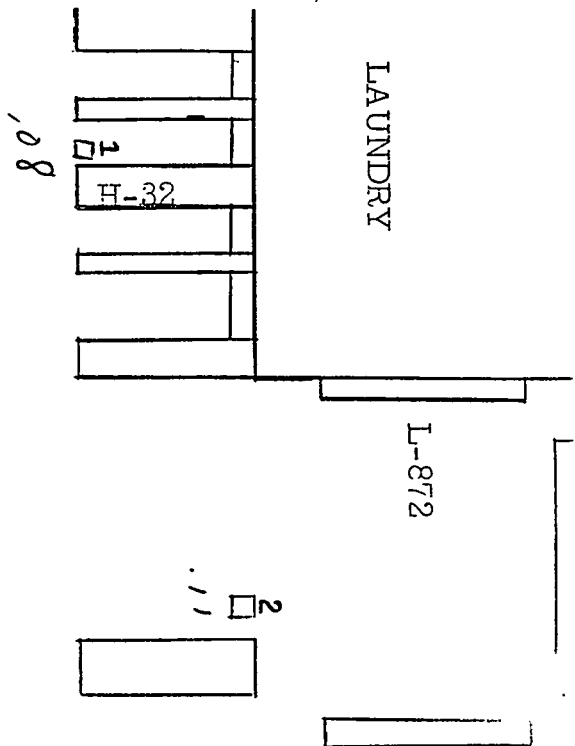
F-851

CHEMICAL RECOVER.

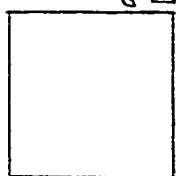
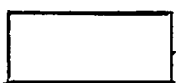
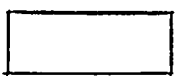
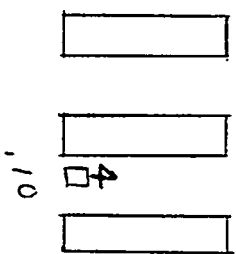
LAUNDRY

L-872

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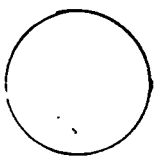
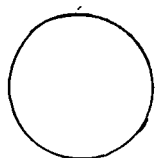
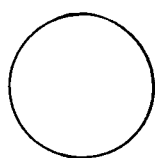
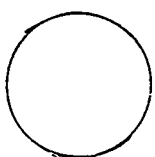
L-804



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F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9204-4

ATTENTION

COPY TO J. P. Murray

G. A. Strasser

R. F. Hibbs

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC

J. W. Ebert

APPROVED FOR PUBLIC RELEASE DATE June 24, 1954

ANSWERING LETTER DATE

Technical Information Office subject Weekly Solvent Report,

H. C. McBirney

Building 9204-4

Neal Dow

Carl Frazier

C. A. Kasperek

L. C. Emerson, Y12RC

File

Y/HG-0081/24

The following air samples were taken during the week ending June 20, 1954 to determine the level of solvent contamination in the various areas listed below:

Location - 9204-4	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades (Trays R 1 through R 11)	125	0.05	0.28	0.14	74
Cascades (with exception of Trays R 1 - R 11)	279	0.01	0.34	0.09	27
Blender Stations	67	0.04	0.48	0.13	66
Bonnet Repair Shop	17	0.04	0.09	0.06	0

The following table shows the twenty-four hour level of solvent contamination in the various areas:

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station	4	Near FS10 at Col. F-41)	.13	.30	.20
Evaporator Feed Rm	5	(Col. H-3)	.05	.08	.07
Blender Station FS4	7	In Cat Walk	.06	.17	.12
Cascades	7	Upper at Storage Bin	.06	.24	.14

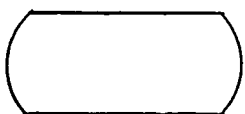
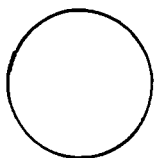
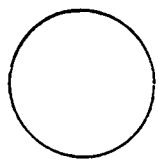
(continued on page 2)

The average concentration shown by the permanent monitors in the solvent purification room was 0.08 mg/M^3 and in the chemical recovery area 0.10 mg/M^3 . Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.

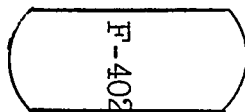
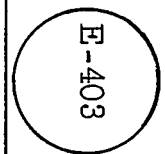
C. M. West
C. M. West
Health Physics Department

GBA:mcm

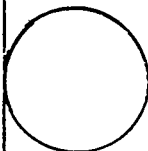
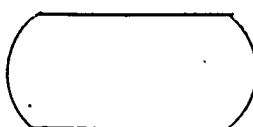
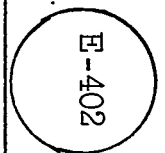
SOLVENT PURIFICATION ROOM



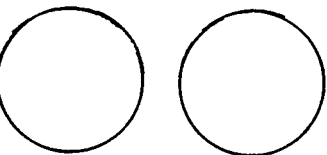
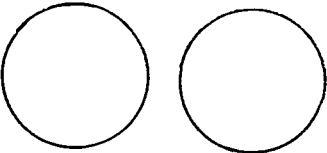
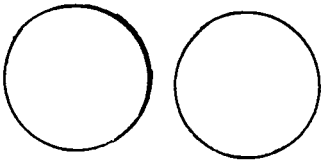
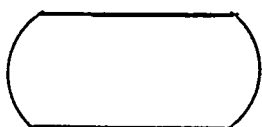
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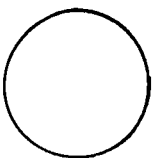
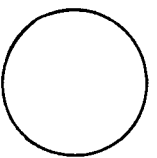
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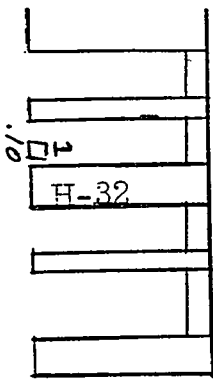


CHEMICAL RECOVERY

LAUNDRY

L-872

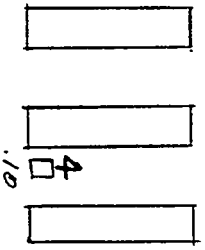
Evap.



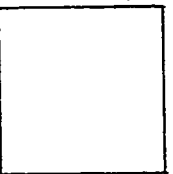
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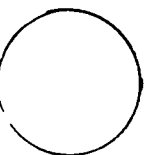
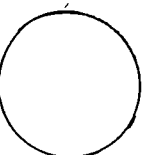
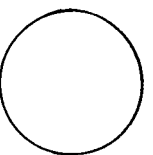
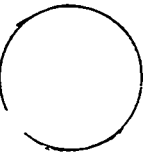
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F-851



INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9201-2

DATE June 29, 1954

ANSWERING LETTER DATE

ATTENTION

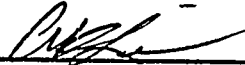
COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/25

The following air samples were taken during the week ending June 27, 1954 to determine the level of solvent contamination in the various areas listed below:

Location - 9204-4	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades (Trays A1 - A5)	44	.02	.06	.04	0
Cascades (Trays R2 - R15)	124	.06	.20	.12	59
Flow Control Area	17	.06	.09	.08	0
Blender Stations (Sta. 1 - 8 N and S Plant)	17	.04	.19	.08	24
Blender Stations * - (Sta. 9 -13 S Plant)	17	.05	.26	.14	71
Feed Preparation	15	.04	.07	.06	0
Evaporator Feed	17	.03	.08	.06	0

* Highly contaminated floors are responsible for this area exceeding the maximum permissible limit of (.1 mg/M³). Maintenance work directly above these Blender Stations on the upper Cascade was partially responsible for the contaminated floors.

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date 4/12/54


June 29, 1954

The following table shows the twenty-four hour level of solvent contamination in the various areas.

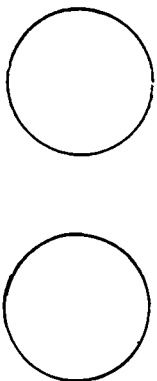
Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station *	Col. F41 - FS 10	4	.18	.44	.29
Blender Station	Catwalk FS 4	6	.04	.09	.07
Evap. Feed Room	Col. H 3	7	.04	.08	.05
Cascades	Upper at Storage Bin	7	.12	.22	.15

* Highly contaminated floors are responsible for this area exceeding the maximum permissible limit of (.1 mg/M³). Maintenance work directly above these Blender Stations on the upper Cascade was partially responsible for the contaminated floors.

The average concentration shown by the permanent monitors in the solvent purification room was .09 mg/M³ and in the chemical recovery area .09 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

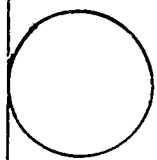
GBA:ej



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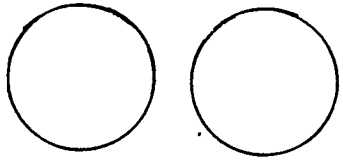
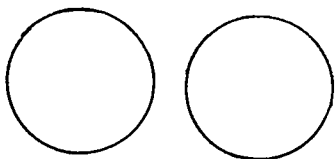
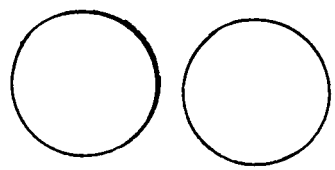
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SOLVENT PURIFICATION ROOM



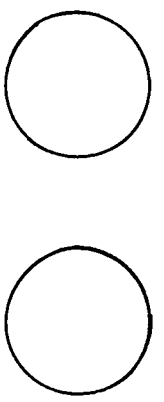
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Col. G-12



SOLVENT PURIFICATION ROOM

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Col. G-18

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE July 7, 1954
APPROVED FOR PUBLIC RELEASE

ATTENTION

COPY TO J. P. Murray
G. A. Strasser
R. F. Hibbs
L. W. Bagwell
J. W. Strohecker
C. R. Sullivan, Jr., M.D.
J. W. Ebert

ANSWERING LETTER DATE
4/13/54
Technical Information Office
F. Williams
H. C. McPirney
Neal Dow
~~Carl Frazier~~ Lee Pruitt
C. A. Kasperek
L. C. Emerson, Y12RC
File

SUBJECT Weekly Solvent Report
Date Building 9204-4

Y/HG-0081/26

The following air samples were taken during the week ending July 4, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades	34	.06	.22	.14	68
Blender Stations *	34	.09	.22	.16	88
Flow Control	17	.03	.21	.09	24
Demineralizer	14	.06	.13	.10	43
Bonnet Storage	12	.04	.10	.07	0
Bonnet Repair	16	.02	.07	.05	0
Control Laboratory	13	.03	.06	.04	0
Product Finishing	35	0.0	.08	.03	0

* This area is running high because of highly contaminated floor.

The following table shows the twenty-four hour level of solvent contamination in the various areas:

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station*	7	At FS-10 near Col. F-41	.13	.24	.17
Blender Station	7	At #4 on catwalk	.04	.08	.06
Evaporator Room	7	Column H-3	.05	.10	.07
Upper Cascade	6	At storage bin	.10	.21	.15

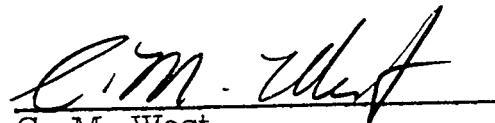
* This area is running high because of highly contaminated floor.

W. K. Whitson

-2-

July 7, 1954

The average concentration shown by the permanent monitors in the solvent purification room was 0.08 mg/M³ and in the chemical recovery area 0.11 mg/M³. Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

GBA:cs

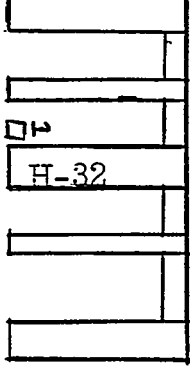
Attachments

CHEMICAL RECOVERY

LAUNDRY

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Evap.

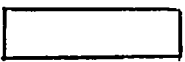


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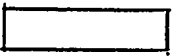
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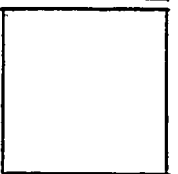
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SOLVENT PURIFICATION ROOM

F-461

F-467

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J-461A

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200 7/23/54

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9201-2

DATE July 14, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. L. C. Emerson, Y12RC ✓
J. W. Ebert File

Y/HG-0081/27

The following air samples were taken during the week ending ~~June~~ ^{July} 11, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent air Conc. mg/M ³			Per Cent of Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	51	.03	.13	.08	12
Mechincal Shop	17	0.0	.06	.03	0
Demineralizer	15	.06	.11	.08	13
Bonnet Repair	16	.03	.06	.05	0
Blender Stations	119	.02	.23	.07	10

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	6	.07	.15	.10
Blender Station #4	Catwalk	7	.05	.11	.07
Evap. Feed Room	Column H3	7	.04	.07	.05
Upper Cascade	At storage bin	6	.06	.15	.10

The average concentration shown by the permanent monitors in the solvent purification room was .06 mg/M³ and in the chemical recovery area .08 mg/M³.

APPROVED FOR PUBLIC RELEASE

[Signature] 4/13/54
Technical Information Office Date

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

W. K. Whitson

-2-

July 14, 1954

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.

A handwritten signature in dark ink, appearing to read 'C. M. West', written over a horizontal line.

C. M. West
Health Physics Department

GBA:cs

CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

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SOLVENT PURIFICATION ROOM

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Col. G-12

INTE. COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE July 23, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams **SUBJECT** Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr. M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/4G-0081/28

The following air samples were taken during the week ending July 18, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascades	131	.03	.40	.10	46
Blender Stations	67	.05	.24	.11	49
Flow Control	17	.03	.21	.05	6
Bonnet Storage	11	.07	.10	.09	0
Bonnet Repair	17	.03	.10	.06	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	7	.08	.15	.11
Blender Station #4	Catwalk	7	.04	.10	.07
Evap. Feed Room	Column H3	6	.03	.08	.06
Upper Cascade	At storage bin	7	.11	.14	.11

The average concentration shown by the permanent monitors in the solvent purification room was .06 mg/M³ and in the chemical recovery area .08 mg/M³.

APPROVED FOR PUBLIC RELEASE



Technical Information Office Date 4/13/74

W. K. Whitson

- 2 -

July 23, 1954

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

A:R:ej

CHEMICAL RECOVERY

LA UNDRY

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Evap.

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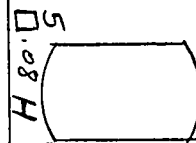
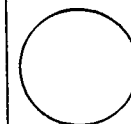
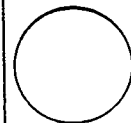
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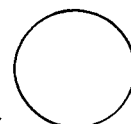
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SOLVENT PURIFICATION ROOM

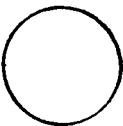
F-461

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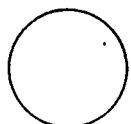
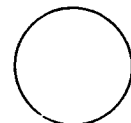
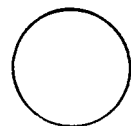


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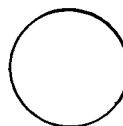
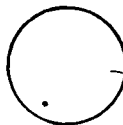
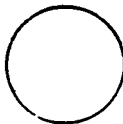


J-467

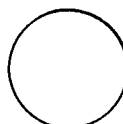
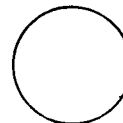


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8/5/54 **INTER-COMPANY CORRESPONDENCE**

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE July 27, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray
G. A. Strasser
R. F. Hibbs
L. W. Bagwell
J. W. Strochecker
C. R. Sullivan, Jr., M.D.
J. W. Ebert

R. Williams
H. C. McBirney
Neal Dow
Lee Pruitt
C. A. Kasperek
L. C. Emerson, Y12RC
File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/29


The following air samples were taken during the week ending July 25, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	66	.03	.40	.07	8
Blender Station	68	.06	.19	.10	37
Bonnet Storage Area	12	.06	.21	.12	33
Demineralizer	16	.06	.10	.07	0
Extract	33	0.0	.02	0.0	0
Bonnet Repair	17	.02	.08	.05	0
Flow Control	17	.04	.11	.08	18

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	5	.09	.17	.12
Blender Station #4	Catwalk	5	.06	.13	.09
Evap. Feed Room	Column H3	4	.05	.06	.05
Upper Cascade	At storage bin	6	.10	.15	.13

The average concentration shown by the permanent monitors in the solvent purification room was .06 mg/M³ and in the chemical recovery area .08 mg/M³.

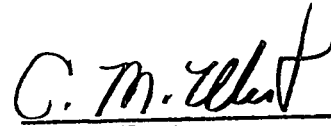
APPROVED FOR PUBLIC RELEASE	
	4/13/54
Technical Information Office	Date

W. K. Whitson

-2-

July 27, 1954

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

A:R:ej

LA UNDRY

L-872

H-32

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Evap.

CHEMICAL RECOVERY

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SOLVENT PURIFICATION ROOM

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Col. G-12

8/9/54
LEE
INTER COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE August 4, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams **SUBJECT** Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strochecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/4G-0081/30

The following air samples were taken during the week ending August 1, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	64	.04	.29	.09	20
Blender Stations	69	.06	.31	.11	30
Flow Control Area	17	.06	.10	.07	0
Under N Plant E End	16	.05	.15	.08	18
Under S Plant E End	17	.03	.06	.04	0
Under Cascade between solvent room and vent gas	16	.04	.06	.05	0
Evaporator Feed Rm	17	.03	.07	.05	0
Feed Preparation Rm	15	.05	.15	.09	33

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	5	.08	.18	.13
Blender Station FN10*	Column J41	6	.04	.12	.08
Blender Station #4	Catwalk	7	.05	.10	.07
Upper Cascade	At storage bin	7	.13	.28	.17

* Portable Speedomax moved from Evaporator Feed Room to Blender Station FN10 effective 7-26-54


APPROVED FOR PUBLIC RELEASE

[Signature] 4/13/54
Technical Information Office Date

August 4, 1954

The average concentration shown by the permanent monitors in the solvent purification area was .07 mg/M³ and in the chemical recovery area .11 mg/M³.

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

A:R:ej

CHEMICAL RECOVERY

LAUNDRY

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Evap.

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SOLVENT PURIFICATION ROOM

F-461

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J-467

J-461A

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D.07

Col. G-12

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE August 10, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strochecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/31

The following air samples were taken during the week ending August 8, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	68	.01	.13	.06	5
Blender Stations	68	.01	.13	.06	1
Bonnet Storage	11	.05	.10	.08	0
Bonnet Repair	17	.05	.09	.07	0
Demineralizer	17	.04	.07	.05	0
Tray and Central Control	44	0.00	.02	0.00	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Stations	Column F41	6	.09	.15	.12
Blender Stations	Column J41	7	.05	.13	.09
Blender Stations #4	Catwalk	7	.05	.10	.07
Upper Cascade	At storage bin	7	.07	.12	.09

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date

August 10, 1954

The average concentration shown by the permanent monitors in the solvent purification area was .07 mg/M³ and in the chemical recovery area .08 mg/M³.

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.



C. M. West
Health Physics Department

A:R:ej

CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

H-32

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SOLVENT PURIFICATION ROOM

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Col. G-12

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE August 18, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/AG-0081/32

The following air samples were taken during the week ending August 15, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	113	0.0	2.10 ⁺	.13	44
Blender Stations	68	.04	.19	.07	10
Flow Control Area	14	.03	.22	.07	14
Evaporator Feed	17	.02	.04	.03	0
Feed Preparation	17	.01	.07	.03	0
Bonnet Repair	17	.04	.07	.05	0
Bonnet Storage	11	.07	.16	.09	0
Demineralizer	16	.06	.10	.07	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	7	.05	.12	.10
Blender Station FN10	Column J41	7	.06	.11	.08
Blender Station #4	Catwalk	7	.04	.07	.05
Upper Cascade	At storage bin	7	.06	.16	.11

The average concentration shown by the permanent monitors in the solvent purification room was .11 mg/M³ and in the chemical recovery area .07 mg/M³.

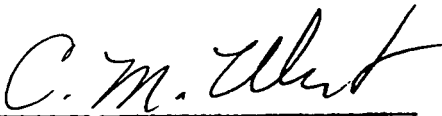
APPROVED FOR PUBLIC RELEASE	
<i>[Signature]</i>	4/13/54
Technical Information Office	Date

W. K. Whitson

- 2 -

August 18, 1954

Attached are schematic designs of the solvent purification and chemical recovery areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

A:R:ej

CHEMICAL RECOVERY

LAUNDRY

L-872

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Evap.

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Col. H

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SOLVENT PURIFICATION ROOM

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE August 24, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

Y/HG-0081/33

The following air samples were taken during the week ending August 22, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Blender Stations	68	.07	.29	.15	84
Demineralizer	16	.03	.06	.04	0
Bonnet Storage	11	.03	.08	.06	0
Bonnet Repair	17	.02	.06	.04	0
Feed Preparation Rm.	17	.04	.11	.07	6
Evaporator Feed Area	17	0.0	.03	.02	0
Flow Control Area	17	.04	.12	.08	12
Extract	8	.02	.04	.02	0

The following table shows the twenty-four hour level of solvent contamination in the various areas

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	5	.11	.27	.16
Blender Station FN10	Column J41	7	.07	.26	.18
Blender Station #4	Catwalk	5	.04	.13	.09
Upper Cascades	At storage bin	7	.08	.25	.14


APPROVED FOR PUBLIC RELEASE

Technical Information Office Date

August 24, 1954

The average concentration shown by the permanent monitors in the Solvent Purification Room was .06 mg/M³ and in the Chemical Recovery Area .08 mg/M³.

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the individual permanently installed solvent detectors.

A handwritten signature in cursive script, reading "C. M. West", written over a horizontal line.

C. M. West
Health Physics Department

A:R:ej

CHEMICAL RECOVERY

Evap.

L-872

LAUNDRY

H-32

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L-804

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CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

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L-804

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F-851

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9/10/54 INTI COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE August 31, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams SUBJECT Weekly Solvent Report
G. A. Strasser H. C. McBirney Building 9204-4
R. F. Hibbs Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Ebert File

V/HG-0081/34

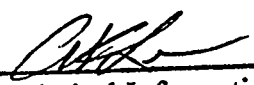
The following air samples were taken during the week ending August 29, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	69	.05	.24	.11	49
Blender Stations	68	.05	.40	.12	50
Bonnet Storage	12	.09	.14	.10	42
Bonnet Repair	17	.05	.07	.06	0
Demineralizer	17	.05	.09	.07	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	Location	No. Days	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Blender Station FS10	Column F41	7	.04	.14	.10
Blender Station FN10	Column J41	7	.08	.17	.11
Blender Station FS4	Catwalk	7	.03	.12	.09
Upper Cascade	At storage bin	7	.14	.21	.17

The average concentration shown by the permanent monitors in the Solvent Purification Room was .06 mg/M³ and in the Chemical Recovery Area .10 mg/M³.


APPROVED FOR PUBLIC RELEASE	
	4/13/54
Technical Information Office	Date

W. K. Whitson

- 2 -

August 31, 1954

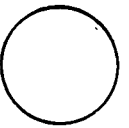
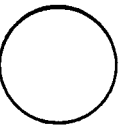
Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the individual permanently installed solvent detectors.


C. M. West
Health Physics Department

A:R:ej

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F-467



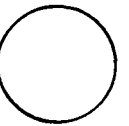
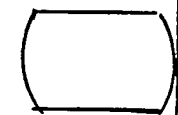
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SOLVENT PURIFICATION ROOM

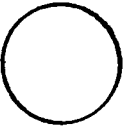
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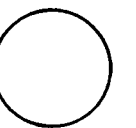
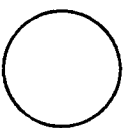
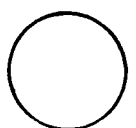
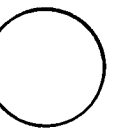
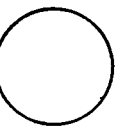
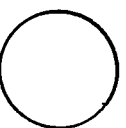
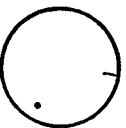
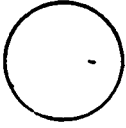
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J-467

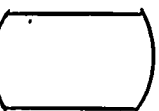
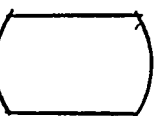
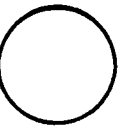
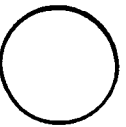
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Col. G-12



262

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INTER COMPANY CORRESPONDENCE

(INSERT
NAME)COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

Post Office Box P
OAK RIDGE, TENN.TO W. K. Whitson
LOCATION Building 9201-2

DATE October 12, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray	R. Williams
G. A. Strasser	H. C. McBirney
R. F. Hibbs	Neal Dow
L. W. Bagwell	Lee Pruitt
J. W. Strohecker	C. A. Kasperek
L. J. LaFrance	L. C. Emerson, Y12RC 4-2000
J. W. Ebert	File

SUBJECT Monthly Solvent Report
Building 9204-4

Y/HG-0049/1

for Sept. 1954

This is the first of a series of Monthly Solvent Air Reports. The following air samples were taken during the month of September, 1954 to determine the levels of solvent contamination in the various areas listed below:

Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	Percent of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Blender Sta.	5	305	.06	4	0
Bonnet Rpr.	3	51	.04	0	0
Bonnet					
Storage	3	33	.05	0	0
Cascade	4	250	.05	1	0
Cont. Lab.	1	12	<.01	0	0
Demerena- lizer	2	32	.03	0	0
Evap. Feed Room	3	45	.01	0	0
Extract	5	142	<.01	1	0
Feed Prep.	2	30	.03	0	0
Flow Control	2	34	.05	6	0
Mech. Shop	1	17	.02	0	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

APPROVED FOR PUBLIC RELEASE


 4/5/74
 Technical Information Office Date

October 12, 1954

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	Percent of Days Exceeding MPL .1 mg/M ³
Blender Sta. FS 10	Column F41	33	.10	48
Blender Sta. FN 10	Column J41	30	.07	0
Blender Sta. FS 4	Catwalk	30	.05	0
Upper Cascade	At Storage Bin	31	.09	29
Chemical Recovery*	1	31	.06	0
	2	33	.07	0
	3	33	.06	12
	4	34	.09	15
	5	34	.07	15
Solvent Purifica- tion*	1	30	.05	0
	2	32	.06	0
	3	32	.04	0
	4	32	.04	0
	5	32	.06	3

* See attached schematic drawings for approximate location of continuous permanent monitors.



C. M. West
Health Physics Department

MS:ej

CHEMICAL RECOVERY

Evap.

LAUNDRY

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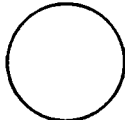
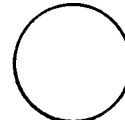

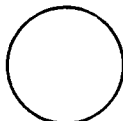
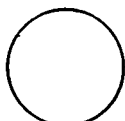
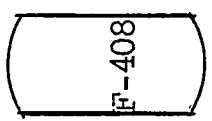

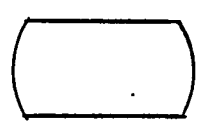
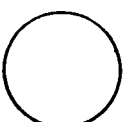
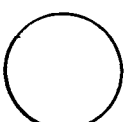
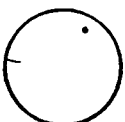
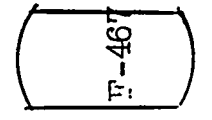

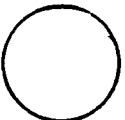
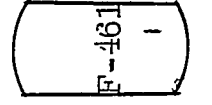

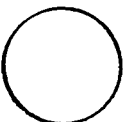

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INTEL COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE November 10, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray R. Williams
W. C. Moore H. C. McBirney
W. A. Pfeiler Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. A. Kasperek
L. J. LaFrance L. C. Emerson, Y12RC
J. W. Ebert File


SUBJECT Monthly Solvent Report
Building 9204-4

Y/HG-0049/2

The following air samples were taken during the month of October, 1954 to determine the levels of solvent contamination in the various areas listed below:

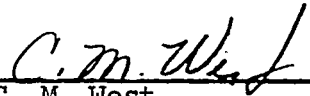
Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	Percent of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Cascade	2	134	.08	11	0
Blender Sta.	3	205	.07	13	0
Flow Control	3	51	.06	8	0
Feed Prep.	2	30	.02	0	0
Demineralizer	3	47	.05	0	0
Extract	3	87	< .01	0	0
Bonnet Stor.	3	33	.06	12	0
Bonnet Rpr.	3	51	.04	0	0
Pump Repair	1	11	.01	0	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

APPROVED FOR PUBLIC RELEASE	
	4/5/54
Technical Information Office	Date

Area	Location	Total No. Days Sampled	Average Sol. Air Conc mg/M ³	Percent of Days Exceeding MPL .1 mg/M ³
Blender Sta. FS 10	Column F41	26	.06	0
Blender Sta. FN 10	Column J41	25	.08	4
Blender Sta. FS 4	Catwalk	25	.06	8
Upper Cascade	Storage Bin	27	.12	56
Chemical Recovery*	1	28	.08	18
	2	28	.08	14
	3	28	.07	7
	4	26	.09	31
	5	26	.08	12
Solvent Purification*	1	26	.07	8
	2	27	.07	4
	3	28	.06	0
	4	27	.06	4
	5	27	.07	7

* See attached schematic drawings for approximate location of continuous permanent monitors.


 C. M. West
 Health Physics Department

MS:ej

CHEMICAL RECOVERY

LAUNDRY

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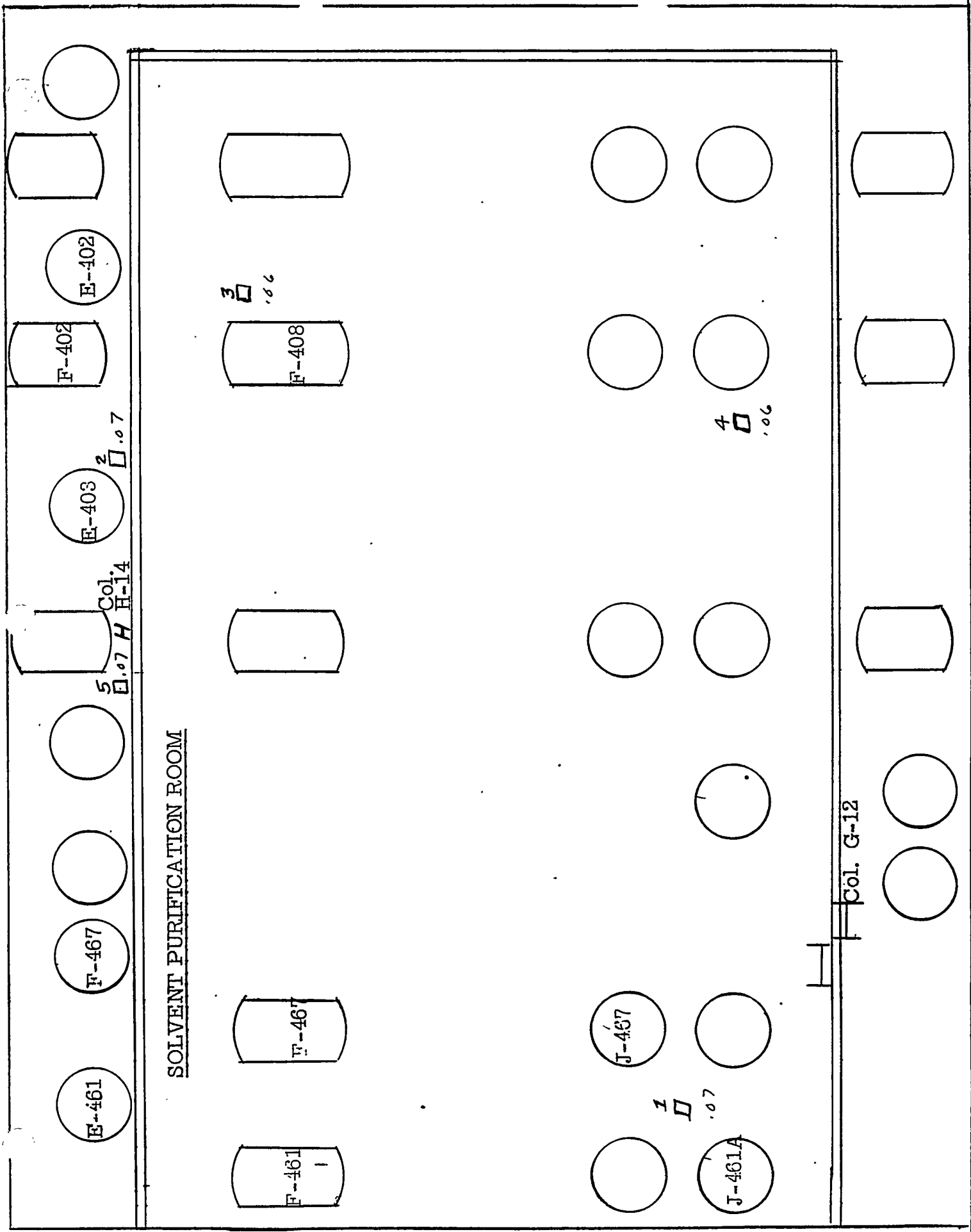
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SOLVENT PURIFICATION ROOM

Col. G-12

200
12/14
INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE December 10, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams
W. C. Moore H. C. McBirney
W. A. Pfeiler Neal Dow
L. W. Bagwell Lee Pruitt
J. W. Strohecker C. R. Kasperek
L. J. LaFrance L. C. Emerson, Y12RC
J. W. Ebert File


SUBJECT Monthly Solvent Report
Building 9204-4

Y/HG-0049/3

The following air samples were taken at Building 9204-4 during the month of November, 1954, to determine the levels of solvent contamination in the various areas listed below:


Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples > MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Cascade	4	264	.04	3	0
Blender Stations	4	272	.06	11	0
Flow Control	2	34	.04	0	0
Chemical Recovery	1	51	.10	40	0
Tonic Cell Room	1	13	.01	0	0
Extract	3	86	< .01	0	0
Feed Prep.	2	30	.03	0	0
Demineralizer	2	32	.03	0	0
Evaporator Feed	2	34	.04	3	0
Bonnet Storage	4	44	.05	5	0
Bonnet Repair	4	68	.06	7	0
Mechanical Shop	1	17	.05	6	0
Tray and Central Control	1	45	0.0	0	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

APPROVED FOR PUBLIC RELEASE	
	4/5/74
Technical Information Office	Date

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	Percent of Days Exceeding MPL .1 mg/M ³
Blender Station FS10	Column F41	27	.07	4
Blender Station FN10	Column J41	27	.07	0
Blender Station FS4	Catwalk	26	.05	0
Upper Cascade	Storage Bin	26	.08	15
Chemical Recovery*	1	27	.10	44
	2	28	.12	82
	3	28	.10	39
	4	28	.11	39
	5	28	.10	32
Solvent Purification*	1	28	.07	7
	2	28	.07	14
	3	28	.07	4
	4	28	.08	7
	5	27	.08	15

* See attached schematic drawings for approximate location of continuous monitors.


C. M. West
Health Physics Department

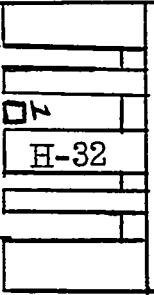
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CHEMICAL RECOVERY

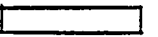
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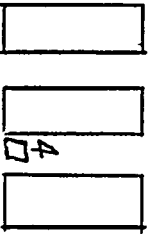
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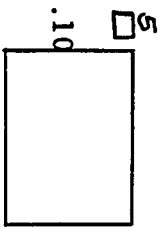
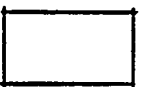
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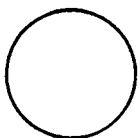
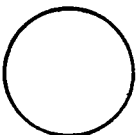
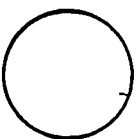
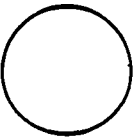
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SOVENT PURIFICATION ROOM

E-461

E-467

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S-401A

E-403

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E-402

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05 Col. H-14

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J-461A

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Col. G-12

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1/51
INTER-COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P
OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE January 13, 1955

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray R. Williams **SUBJECT** December Solvent Report
W. C. Moore H. C. McBirney Building 9204-4
W. A. Pfeiler Neal Dow
L. W. Bagwell C. R. Kasperek
J. W. Strohecker L. C. Emerson, Y12RC
L. J. LaFrance File
J. W. Ebert

Y/HG-0049/4

The following table gives a resume' of spot general air samples taken during the month of December 1954, to determine the levels of solvent concentration in the various areas listed below. All spot general air weekly averages were below the Maximum Permissible Limit of .1 mg/M³.

Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Cascade	5	315	.04	5	0
Blender Stations	5	353	.05	6	0
Flow Control	3	51	.06	4	0
Extract	2	58	0.0	0	0
Feed Prep.	1	15	.03	0	0
Demineralizer	3	48	.03	0	0
Evaporator Feed	4	85	.04	0	0
Bonnet Storage	3	33	.04	0	0
Bonnet Repair	3	51	.06	6	0
Control Lab.	1	15	0.0	0	0

The following gives a resume' of the results recorded by the continuous type air monitors. All results were below the Maximum Permissible Limit of .1 mg/M³, with exception of sampler no. 4 in Solvent Purification and the sampler located on the east end of the upper cascade.

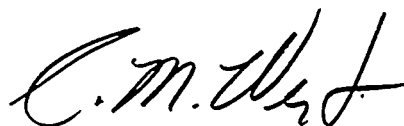
APPROVED FOR PUBLIC RELEASE

Technical Information Office Date

UNCLASSIFIED

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	%of Days Exceeding MPL .1 mg/M ³
Blender Station FS10	Column F41	34	.07	3
Blender Station FN10	Column J41	17	.06	0
Blender Station FS4	Catwalk	18	.07	0
Upper Cascade	Storage Bin	35	.10	37
Chemical Recovery*	1	34	.09	29
	2	35	.08	11
	3	35	.07	11
	4	33	.09	30
	5	35	.07	9
Solvent Purification*	1	34	.07	9
	2	32	.09	34
	3	34	.09	26
	4	32	.10	34
	5	34	.09	26

*See attached schematic drawings for approximate location of continuous monitors.



C. M. West
Health Physics Department

MS/j

LAUNDRY

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Evap.

CHEMICAL RECOVERY

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SOLVENT PURIFICATION ROOM

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S-401A

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F-402

E-402

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DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>MS/CR2-0199</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>2366000 3</u>	Date of Request <u>Dec 5 10/18/95</u>
Unclassified Title: <u>SOLVENT: 9204-4 MONTHLY REPORT Jan-Apr 1955</u> <u>(2090-1H-4)</u>			

Author(s) Requestor: Steve Wiley

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____

☒ Other (Specify): To Be Released to ChemRisk, Phase II

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 Document will be distributed at meeting ☒ No ☐ Yes
 Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
 Document has been previously released ☒ No ☐ Yes (Reference) _____

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TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

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 DOCUMENT: Level U Category -
R. Sanford 10/19/95
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M. J. Wiley 10/18/95
 Signature Date

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10/20/95
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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE January 13, 1955

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
W. C. Moore
W. A. Pfeiler
L. W. Bagwell
J. W. Strohecker
L. J. LaFrance
J. W. Ebert

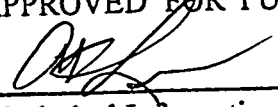
R. Williams
H. C. McBirney
Neal Dow
C. R. Kasperek
L. C. Emerson, Y12RC
File

SUBJECT December Solvent Report
Building 9204-4

The following table gives a resume' of spot general air samples taken during the month of December 1954, to determine the levels of solvent concentration in the various areas listed below. All spot general air weekly averages were below the Maximum Permissible Limit of .1 mg/M³.

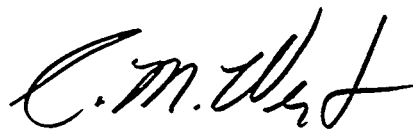
Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPI
Cascade	5	315	.04	5	0
Blender Stations	5	353	.05	6	0
Flow Control	3	51	.06	4	0
Extract	2	58	0.0	0	0
Feed Prep.	1	15	.03	0	0
Demineralizer	3	48	.03	0	0
Evaporator Feed	4	85	.04	0	0
Bonnet Storage	3	33	.04	0	0
Bonnet Repair	3	51	.06	6	0
Control Lab.	1	15	0.0	0	0

The following gives a resume' of the results recorded by the continuous type air monitors. All results were below the Maximum Permissible Limit of .1 mg/M³, with exception of sampler no. 4 in Solvent Purification and the sampler located on the east end of the upper cascade.

APPROVED FOR PUBLIC RELEASE	
	10/20/55
Technical Information Office	Date

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	%of Days Exceeding MPL .1 mg/M ³
Blender Station FS10	Column F41	34	.07	3
Blender Station FN10	Column J41	17	.06	0
Blender Station FS4	Catwalk	18	.07	0
Upper Cascade	Storage Bin	35	.10	37
Chemical Recovery*	1	34	.09	29
	2	35	.08	11
	3	35	.07	11
	4	33	.09	30
	5	35	.07	9
Solvent Purification*	1	34	.07	9
	2	32	.09	34
	3	34	.09	26
	4	32	.10	34
	5	34	.09	26

*See attached schematic drawings for approximate location of continuous monitors.



C. M. West
Health Physics Department

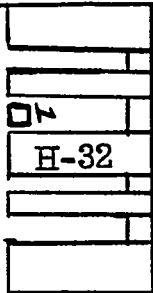
MS/j

CHEMICAL RECOVERY

LAUNDRY

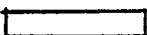
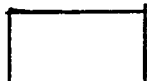
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Evap.

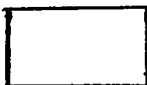


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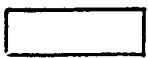
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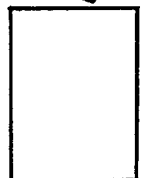
L-804



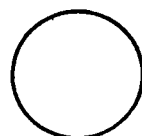
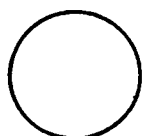
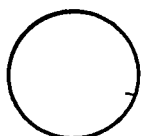
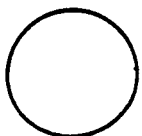
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F-851



SOLVENT PURIFICATION ROOM

E-461

E-467

J-401

2.09

S-401A

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Cal. H-14

E-403

F-402

E-402

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.09

.09

F-461

F-467

F-408

J-467

6.07

J-461A

4.10

Cal. G-12

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE February 10, 1955

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert SUBJECT January Solvent Report
W. C. Moore R. Williams Building 9204-4
W. A. Pfeiler Neal Dow
L. W. Bagwell U. L. Alsbaugh
C. R. Sullivan, Jr., M.D. L. C. Emerson, Y12RC
J. W. Strohecker File
L. J. LaFrance ~~XXXX~~

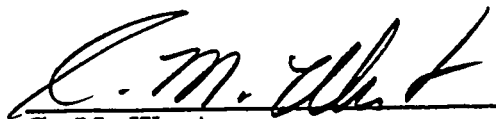
The following table gives a resume' of spot general air samples during the month of January 1955, to determine the levels of solvent concentration in the various areas listed below. All spot general air weekly averages were below the Maximum Permissible Limit of .1 mg/M³.

Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples >MPL of .1 mg/M ³	No. Wks Conc. Exceeded MPL
Cascade	2	132	.04	2	0
Blender Stations	2	134	.03	0	0
Bonnet Storage	2	22	.06	5	0
Bonnet Repair	2	34	.07	0	0
Demineralizer	1	16	.03	0	0
Mechanical Shop	1	17	.02	0	0
Central and Tray Control	1	46	0.0	0	0

The following gives a resume' of the results recorded by the continuous type air monitors.

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	% of Days Exceeding MPL .1 mg/M ³
Blender Station FS10 Upper Cascade	Column F41	28	.06	0
	Storage Bin	28	.09	25
Chemical Recovery*	1	28	.09	29
	2	28	.10	39
	3	27	.12	59
	4	28	.11	61
	5	28	.07	0
Solvent Purification*	1	22	.05	0
	2	21	.11	29
	3	22	.06	5
	4	22	.08	5
	5	22	.07	5

* See attached schematic drawings for approximate location of continuous monitors.


C. M. West
Health Physics Department

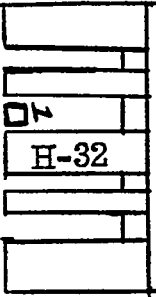
MS/j

CHEMICAL RECOVERY

LAUNDRY

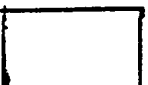
L-872

Evap.



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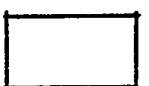
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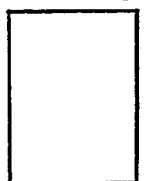
L-804



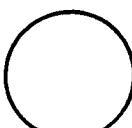
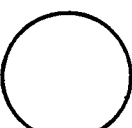
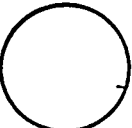
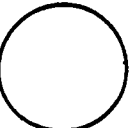
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F-851



SOLVENT PURIFICATION ROOM

E-461

E-467

J-401

S-401A

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☐ Col. H-14

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F-408

J-467

J-461A

.08  4

.05  1

☐ Col. G-12

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE March 10, 1955

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
W. C. Moore
W. A. Pfeiler
L. W. Bagwell
C. R. Sullivan, M. D.
J. W. Strohecker
L. J. LaFrance

D. G. Hill
J. W. Ebert
R. Williams
Neal Dow
U. L. Alsbaugh
L. C. Emerson, Y12RC
File

SUBJECT February Solvent Report
Building 9204-4

The following table gives a resume' of the results of spot general air samples taken during the month of February 1955, to determine the levels of solvent air concentration in the areas listed below.

Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exc'd MPL
Cascade	1	66	.03	0	0
Sol. Purification Rm.	1	34	.15	71	1

The following gives a resume' of the results recorded by the continuous type air monitors.

Area	Location	Total No. Days Sampled	Avg. Sol. Air Conc. mg/M ³	% of Days Exceeding MPL of .1 mg/M ³
Chemical Recovery*	1	27	.09	22
	2	27	.10	30
	3	20	.12	55
	4	26	.10	42
	5	25	.08	12

* See attached schematic Drawing

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

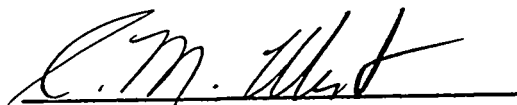
W. K. Whitson

-2-

March 10, 1955

The following gives a resume' of hourly readings (24 times daily) of continuous type air monitors.

Area	Location	Total No. Days Sampled	Avg. Sol. Air Conc. mg/M ³	Per Cent of Days Exceeding MPL of .1 mg/M ³
Sol. Purification	North Side	12	.09	25
Sol. Purification	In Pit	12	.06	0


C. M. West
Health Physics Department

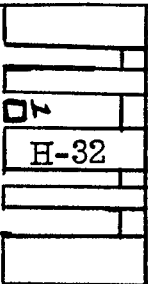
MS/j

CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

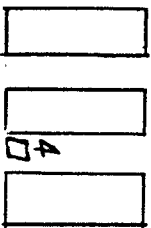


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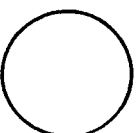
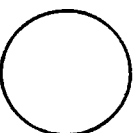
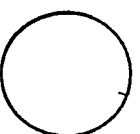
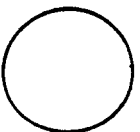
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F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-2

DATE April 11, 1955

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray D. G. Hill
W. C. Moore J. W. Ebert
W. A. Pfeiler R. Williams
L. W. Bagwell Neal Dow
C. R. Sullivan, M. D. U. L. Alspaugh
J. W. Strohecker L. C. Emerson, Y12RC
L. J. LaFrance File

SUBJECT March Solvent Report
Building 9204-4

The following table gives a resume' of the results of spot general air samples taken during the month of March 1955, at building 9204-4, to determine the levels of solvent air concentration in the areas listed below:

Location	Total No. Wks. Sampled	Total No. Samples	Avg. Sol. Air Conc. mg/M ³	% of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exc'd MPL
Cascade	2	132	.03	0	0
Blender Stations	4	169	.05	1	0
Flow Control	3	51	.04	4	0
Chemical Recovery	2	34	.10	38	0
Bonnet Storage	2	22	.05	5	0
Bonnet Repair	2	34	.07	21	0
Evaporator Feed	1	17	.01	0	0
Demineralizer	1	16	.07	0	0

The following gives a resume' of the results recorded by the continuous type air monitors.

Area	Location	Total No. Days Sampled	Avg. Sol. Air Conc. mg/M ³	% of Days Exceeding MPL .1 mg/M ³
Chemical Recovery*	1	34	.10	21
	2	33	.16	88
	3	34	.12	68
	4	34	.11	50
	5	34	.11	47

*See attached schematic drawing

The following gives a resume' of hourly readings (24 times daily) of continuous type air monitors.

Area	Location	Total No. Days Sampled	Avg. Sol. Air Conc. mg/M ³	% of Days Exceeding MPL of .1 mg/M ³
Sol. Purification*	1	30	.08	23
	2	34	.08	24
	3	26	.07	4
	4	33	.07	3
	5	30	.06	0

*See attached schematic drawing


C. M. West
Health Physics Department

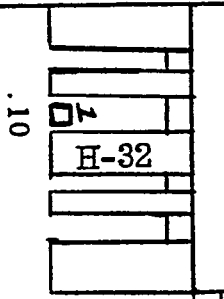
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Note:

This is the last of the Health Physics Department Monthly Solvent Air Reports. Hereafter all solvent air and urine reports will be issued by Mr. L. J. LaFrance, Industrial Hygienist, of the Medical Department.

LAUNDRY

Evap.



or:

H-32

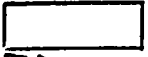
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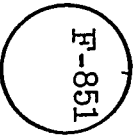
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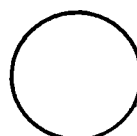
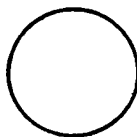
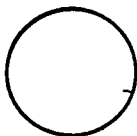
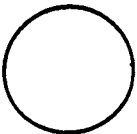
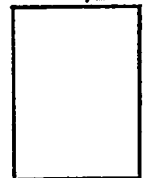
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SOLVENT PURIFICATION ROOM


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E-467

J-401

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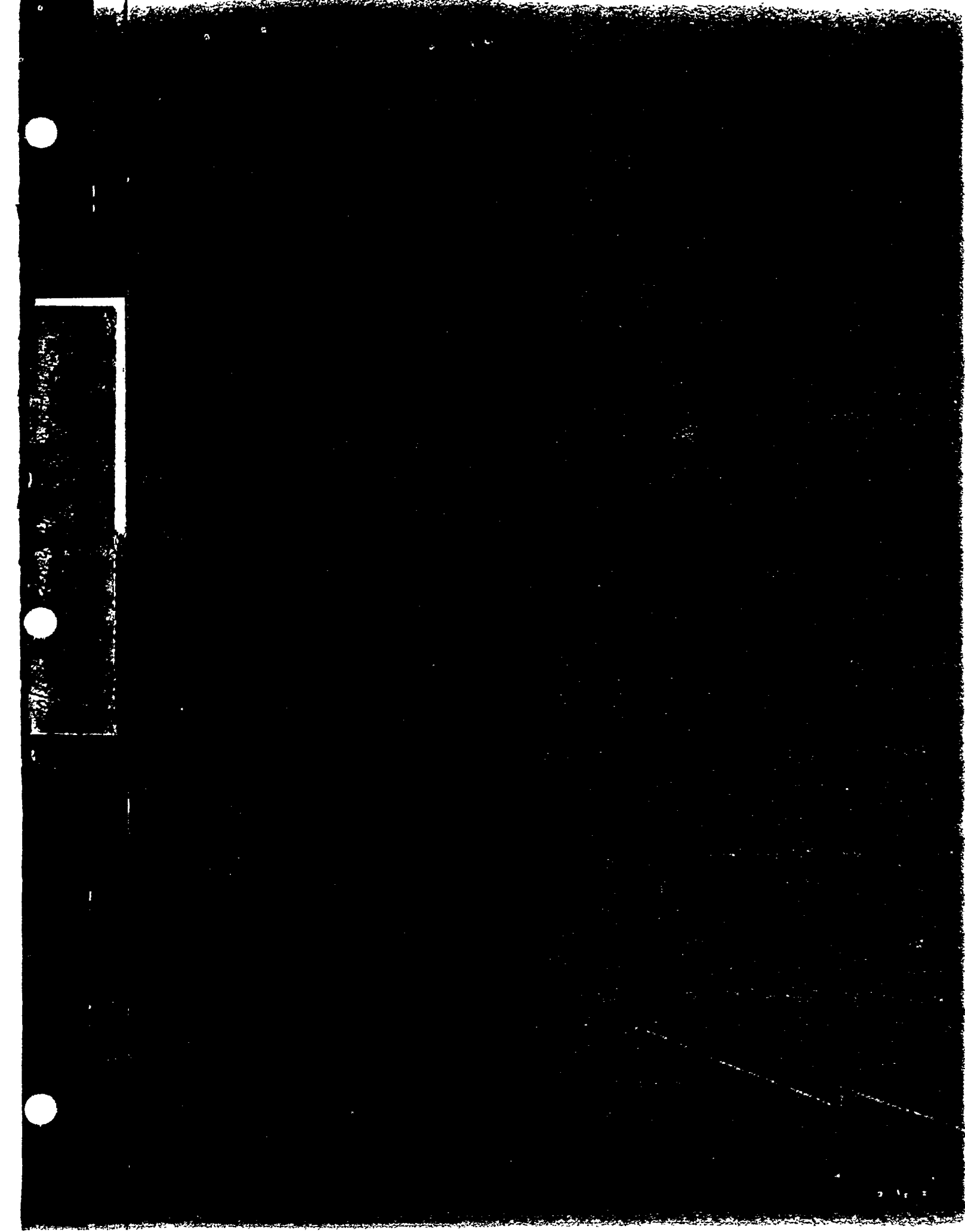
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J-467

 Cal. G-12

DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS		FROM	THROUGH	CODE NUMBER
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z		1951	1957	2000-5000 Y-12 2090-IH-4
BOX NUMBER <u>2</u> OF <u>5</u>		LOCATION IN RECORDS CENTER SECTION <u>20</u> TIER <u>9</u> DR. <u>16</u> Indef.		
CLASS OF FILE RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>		RECORDS VERIFIED BY: Bill Everett		DATE 2/11/58
T-2078 TRANSFER OF RECORDS				



Date: 11-29-99, 12:21 pm MST

From: Richard Baylor at Y-12 Classification Office (transcribed voice mail)

To: Susan Flack

Re: Beta-4 Extract

From a conversation between R. Baylor and Paul Wilkinson, retired employee who worked in Building 9204-4 during the Elex operation:

"At the tail end of the Elex cascades they would create the LiOH; they would evaporate that; some they would draw off as enriched product and the balance would be refluxed to the front end of the cascades. The evaporation and refluxing activities were what were termed Beta-4 extract. Why they still referenced it after Beta-4 stripping occurred I don't know."

Beta Extract

only in TForce rpt (and air ^{conc} reports)

decomposers: amalgam $\xrightarrow{+H_2O}$ Hg + LiOH

interchangeable \rightarrow extract some of product \nearrow

an auxiliary process (also "extract" in Colep discussion)
_{used}

timeline doesn't make sense

FAX pgs to Richard Baylors 423-574-5942 FAX

on p-4 stripping ops / ^{Hg}airconcs

call go for Napier
back

" - 1766 phone

✓ Paul Wilkinson gone until ~~Feb~~ March - would know
(attached record of conversation)

423-483-3891 J. Napier \leftarrow
(call back) & McAbb

Date	ALPHA-4 Y/EX-21/del rev Comments unless referenced as (#)	BETA-4		BETA-4		ALPHA-2	
		Hg (mg/m3)		Hg (mg/m3)		Hg (mg/m3)	
		monthly	quarterly	monthly	quarterly	monthly	quarterly
		0.09				0.11	
		0.08				0.18	
		0.03				0.13	
		0.06				0.07	
		0.03				0.06	
		0.02				0.03	
		0.05				0.06	
		0.09				0.12	
		0.02					
		0.07					
		0.08					
Mar 56 avg		Mar 56 avg	0.07			0.07	
		0.04				0.09	
		0.09				0.08	
		0.13				0.06	
		0.07				0.08	
		0.04				0.12	
		0.07				0.08	
		0.05				0.04	
		0.04				0.04	
		0.11				0.07	
		0.09				0.04	
		0.08					
		0.05					
		0.05					
Apr 56 avg		Apr 56 avg	0.05			0.06	
		0.04				0.07	
		0.06				0.07	
		0.09				0.08	
		0.10				0.06	
		0.04				0.09	
		0.01				0.06	
		0.05				0.02	
		0.03				0.03	
		0.02				0.03	
		0.04					
		0.06					
		0.06					
		0.06					
May 56 avg		May 56 avg	0.06				
Jun 56 avg		Jun 56 avg	0.04			0.05	
Jul 56 avg		Jul 56 avg	0.05			0.06	
Aug 56 avg		Aug 56 avg	0.07			0.04	
Sep 56 avg		Sep 56 avg	NR			0.03	
Oct 56 avg		Oct 56 avg	NR	dismantling		0.02	
Nov 56 avg		Nov 56 avg	NR	strip complete		0.03	
Dec 56 avg		Dec 56 avg	NR			0.02	
Jan 57 avg		Jan 57 avg	NR			0.04	

ALPHA-4				BETA-4		BETA-4		ALPHA-2		ALPHA-2	
				(3)		(3)		(3)		(3)	
Y/EX-21/del rev Comments unless referenced as (#)				Hg (mg/m3)		Hg (mg/m3)		Hg (mg/m3)		Hg (mg/m3)	
Date				monthly		quarterly		monthly		quarterly	
Feb 57 avg	NR			Feb 57 avg	NR					0.03	
Mar 57 avg	NR			Mar 57 avg	NR					0.03	
Apr 57 avg	NR			Apr 57 avg	NR					0.03	
May 57 avg	NR			May 57 avg	NR					0.04	
Jun 57 avg	NR			Jun 57 avg	NR					0.04	
Jul 57 avg	NR			Jul 57 avg	NR					0.03	
Aug 57 avg	NR			Aug 57 avg	NR					0.02	
Sep 57 avg	NR			Sep 57 avg	NR					0.01	
Oct 57 avg	NR			Oct 57 avg	NR					0.06	
Nov 57 avg	NR			Nov 57 avg	NR					0.09	basement exhaust off
Dec 57 avg	NR			Dec 57 avg	NR					NR	
Jan 58 avg	NR			Jan 58 avg	NR					0.00	
Feb 58 avg	NR			Feb 58 avg	NR					0.05	stripping
Mar 58 avg	NR			Mar 58 avg	NR					0.09	stripping; bment exh fan off
Apr 58 avg	NR			Apr 58 avg	NR					0.08	stripping
May 58 avg	NR			May 58 avg	NR					0.12	ceiling removed
Jun 58 avg	NR			Jun 58 avg	NR	0.09	B-4 extract			0.12	basement contam'd
Jul 58 avg	NR			Jul 58 avg	NR	0.08	B-4 extract			0.12	basement readings
Aug 58 avg	NR			Aug 58 avg	NR	0.05	B-4 extract			NR	
Sep 58 avg	NR			Sep 58 avg	NR	0.06	extract;also stripping W end			0.20	elec install in basement
Oct 58 avg	NR			Oct 58 avg	NR	0.05	B-4 extract			NR	
Nov 58 avg	NR			Nov 58 avg	NR	0.05	B-4 extract			NR	
Dec 58 avg	NR			Dec 58 avg	NR	0.02	B-4 extract			NR	stripping; misc sampling
Jan 59 avg	NR			Jan 59 avg	NR	0.02	B-4 extract			NR	
Feb 59 avg	NR			Feb 59 avg	NR	0.01	extract shutdown			NR	misc sampling
Mar 59 avg	NR			Mar 59 avg	NR	0.05	hg recovery start-up			NR	misc sampling; basement excavation
Apr 59 avg	NR			Apr 59 avg	NR	0.05				NR	misc sampling during bment excavation
May 59 avg	NR			May 59 avg	NR	0.04				NR	misc sampling during bment excavation
Jun 59 avg	NR			Jun 59 avg	NR	0.03				(20% >0.2)	
Jul 59 avg	NR			Jul 59 avg	NR	0.03				0.06	basement
Aug 59 avg	NR			Aug 59 avg	NR	0.02				0.04	basement
Sep 59 avg	NR			Sep 59 avg	NR	0.02				0.08	
Oct 59 avg	NR			Oct 59 avg	NR	0.06				0.05	basement MG area
Nov 59 avg	NR			Nov 59 avg	NR					0.05	basement MG area
Dec 59 avg	NR			Dec 59 avg	NR					NR	
Jan 60 avg	NR			Jan 60 avg	NR		misc sampling			NR	misc sampling
Feb 60 avg	NR			Feb 60 avg	NR					NR	misc sampling
				Aug 53		0.07		1Q 1953		0.07	1Q 1954
					0.20			Jan 53		0.02	Jan 54
					0.09	0.05				0.10	0.15
					0.04	0.03				0.07	0.30
					0.15	0.05				0.15	0.16
					0.07	0.04				0.06	0.32
					0.10	0.04				0.14	0.18
					0.08	0.08				0.12	0.20
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					0.01	0.03				0.05	0.24
											0.14

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No: MS/CHR2-0242/DEL REV Author's Telephone No.: 6-0263 Acct. No.: 2366000 3 Date of Request: 10/23/95

Unclassified Title: REPORT-MONTHLY SOLVENT AIR ANALYSIS
(APRIL 1955 TO JANUARY 1960) (2090-1H-4)

Author(s): Requestor: Steve Wiley

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
Document will be distributed at meeting ☒ No ☐ Yes
Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

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[Classified Bracketed] Date

DOCUMENT REQUEST APPROVED (Division or Department)

[Signature] 10/23/95
Signature Date

Signature Date

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☐ External Distribution
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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y OAK RIDGE, TENN.

TO
LOCATION List
ATTENTION
COPY TO
DATE July 12, 1955
ANSWERING LETTER DATE
SUBJECT Industrial Hygiene Report for the Alloy Department 2nd Quarter, 1955

(continued)

shows a departmental breakdown of the samples submitted and the average excretion rates for each group. Individuals noted in departments not associated with the Alloy Division are those who were sampled prior to transfers.

Building 9204-4
Table I
Air Samples

<u>Month</u>	<u>Total # of Samples</u>	<u># Samples - MC</u>
April	726	21
May	765	5
June	705	8

Table II

Average Monthly Concentrations in m³/m³ for various areas

<u>Area</u>	<u>April</u>	<u>May</u>	<u>June</u>
Bonnet Repair	0.08	0.04	0.07
Bonnet Storage	0.06	0.04	0.05
Demineralizer	0.05	0.05	0.03
Chemical Recovery (Spot Samples)	0.15	----	0.11
Chemical Recovery (Recorder)	0.10	0.09	0.06
Flow Control Area	0.05	0.05	0.04
Blender Stations	0.05	0.04	0.03
Extract	0.02	----	----
Feed Prep Room	0.07	0.03	0.02
Cascade North	----	0.06	0.03
Cascade South	----	0.04	0.05
Evaporator Feed Rooms	0.02	----	0.05
Solvent Purification (Spot Samples)	0.12	0.12	----
Solvent Purification (Recorder)	0.07	0.09	0.11
Instrument Shop	----	0.03	----
Electrical Shop	----	0.00	----

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Building 9201-2
Table I
Air Samples

<u>Month</u>	<u>Total # Samples</u>	<u>% Samples > MAC</u>
April	1074	53
May	711	29
June	481	26

Table II

Average Monthly Concentration in mg/m³ for various areas

<u>Area</u>	<u>April</u>	<u>May</u>	<u>June</u>
PTF	0.12	0.08	0.10
MCTF	0.13	0.08	0.06
Colex Tray #1	0.10	0.07	0.07
Colex Tray #2	0.12	0.08	0.11
Colex Tray #3	0.15	0.11	0.17
PTF #2	0.12	0.15	0.06
1st Floor N, PTF #2	---	0.09	---
Mechanical Shop	0.10	0.09	0.07
Machine Shop X-10	0.04	0.04	0.07
Water Fountain 2nd Floor	0.06	0.04	0.08

Building 9201-4
Table I
Air Samples

<u>Month</u>	<u>Total # Samples</u>	<u>% Samples > MAC</u>
May	245	16
June	2081	49

Table II

Average Monthly Concentration in mg/m³ for various areas
Cascades

<u>#10 Cascade</u>	<u>1st Level</u>	<u>2nd Level</u>	<u>3rd Level</u>	<u>4th Level</u>
May	.06	.07	.07	.03
June	.21	.19	.15	.14
<u>#9 Cascade</u>				
June	.10	.46	.37	.56

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Absorbers

	<u>#9</u>	<u>#10</u>	
May	---	---	
June	.23	.16	
Pump Area for Absorber #10			0.08
Feed Decomposer Area			0.16
Hanging Garden			0.11
Feed Prep			0.08
Feed Prep			0.12
Extract			0.03

Building 9201-5
Table I
Air Samples

<u>Month</u>	<u>Total # Samples</u>	<u>% Samples > MAC</u>
April	6582	32
May	6339	33
June	7342	70

(continued)

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Table 11
Average Monthly Concentrations in mg/l² for various areas

**9201-5
Cascades**

<u>#1 Cascade</u>	<u>1st Level</u>	<u>2nd Level</u>	<u>3rd Level</u>	<u>4th Level</u>
April	.16	.17	.16	.09
May	.15	.19	.15	.09
June	.24	.33	.19	.18
<u>#2 Cascade</u>				
April	.14	.15	.11	.06
May	.16	.23	.14	.09
June	.29	.40	.19	.16
<u>#3 Cascade</u>				
April	.14	.16	.11	.07
May	.11	.13	.11	.06
June	.21	.32	.14	.12
<u>#4 Cascade</u>				
April	.14	.14	.09	.06
May	.11	.14	.07	.04
June	.17	.28	.12	.13
<u>#5 Cascade</u>				
April	.06	.03	.09	.06
May	.09	.08	.08	.05
June	.07	.06	.09	.05
<u>#6 Cascade</u>				
May	.11	.08	.13	.09
June	.07	.08	.12	.08

**9201-5
Absorbers**

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
April	.17	.14	.12	.11	.07	.06
May	.13	.10	.09	.07	.10	.10
June	.12	.23	.23	.23	.11	.26

Pump Areas

	<u>Abs. 1&2</u>	<u>Abs. 3&4</u>	<u>Abs. 5&6</u>
April	.19	.16	.16
May	.20	.18	.27
June	.30	.28	.41

(continued)

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Purified Feed Shop

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April
May
June

.37
.33
.45

Chemical Recovery

April
May
June

.10
.07
.24

1st Stage Feed Prep.

April
May
June

.12
.08
.45

2nd Stage Feed Prep.

April
May
June

.15
.22
.08

Mech. Shop

Inst. Shop

Elec. Shop

Buffalo Pump
Repair Area

April
May
June

.08
.14
.15

.06
.06
.07

.05
.05
.19

.14
.11
.19

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Summary of Urine Results

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Maintenance Departments

Dept.	# Participants	# Samples	# Samples 0.3 mg/l	# Participants Above 0.3 mg/l	Ave. Excretion Rate for group mg/l
2014	1	1	0	0	0.15
2015	34	37	8	24	0.21
2018	20	30	12	45	0.27
2026	41	41	2	8	0.14
2065	20	25	4	20	0.16
2158	2	6	0	0	0.10
2159	112	143	31	24	0.21
2160	92	113	28	23	0.23

Process Departments

2685	249	395	121	57	0.26
2687	19	32	7	16	0.16
2692 at Beta 4	121	128	13	11	0.14
2692 at Alpha 2	19	20	8	42	0.30

Other Departments

2 5	4	4	0	0	0.10
2066	1	1	0	0	0.06
2070	2	2	1	20	0.28
2108	8	11	1	13	0.19
2142	2	2	0	0	0.17
2301	8	8	0	0	0.11
2616	1	1	0	0	0.27
2701	1	1	0	0	0.08
2792	1	1	1	100	0.42

Total # of Participants
Total # of Samples
Total # of Samples Above 0.3 mg/l
Total # of Participants above 0.3 mg/l
% of Participants above 0.3 mg/l
% of Samples Above 0.3 mg/l

749
1006
237
192
36
24

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OAK RIDGE, TENN.

TO
LOCATION

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8-3-55

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for Alloy Division
July, 1955

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G. W. Evans
F. V. Tilson
D. A. Jennings
G. R. Janny
Neal Dow, Jr.
Gordon Brooks
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UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation

To: List

Plant: Y-12

Date: December 3, 1956

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Subject: Solvent Air Analysis
for November 1956

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The following is a summary of the solvent vapor sample findings in the various plant areas where solvent is used.

The downward trend in the atmospheric concentrations of solvent vapor continues in most areas.

Building 9201-2

There were 984 samples taken and only 2% were equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.02 mg/m³, and no area had an average equal to the MAC.

Building 9201-5

There were 15,017 samples obtained in Building 9201-5 during November. Of these, 89.8% were below the MAC of 0.10 mg/m³. 8.7% ranged from 0.10 - 0.19 mg/m³, 1.2% from 0.20 - 0.29 mg/m³ and 0.3% from 0.30 - 0.49 mg/m³. This distribution continues to show improvement for 9201-5.

The building average was 0.05 mg/m³ with only two areas having an average in excess of the MAC. These areas were area 1&2 with an average of 0.12 mg/m³ and Absorber 1A with an average of 0.15 mg/m³. Absorber 1A shows no reduction over last months average.

Building 9201-4

There were 8,962 samples obtained in Building 9201-4 and 96.8% of these were below the MAC of 0.10 mg/m³. 3% ranged from 0.10 - 0.19 and 0.2% ranged from 0.20 - 0.39.

The building average was 0.04 mg/m³ with no areas in excess of the MAC. Building 9201-4 continues to show low levels as in the past few months.

Building 9204-4

Some sampling was continued in this area during completion of stripping operations.

The atmospheric concentrations of solvent continued to remain within reasonable limits as in October.

Miscellaneous Samples

Samples continued to be taken in the Laundry and in checking laundered clothing.

Occasional high readings are obtained from freshly laundered coveralls.

Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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Subject: Solvent Air Analysis
for May 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Ave.
9201-1	2,828	96.50	3.22	0.28	.03
9201-5	3,861	99.40	0.60	0.00	.02
9201-2	258	60.46	18.22	21.32	.12
(Stripping)					
9201-2	85	100.00	.00	.00	.00
9808	252	90.87	8.33	.80	.05
(Pump Repair)					
81-10	589	71.48	16.30	12.22	-
(Sludge Burner)					
✓ 9723-18 (Cover- 17		70.59	17.65	11.76	.08
all Pockets)					
✓ 9723-19 (Cover- 17		94.12	5.88	.00	.01
all Pockets)					
✓ 9727-3 (Hydro- 11		100.00	.00	.00	.00
gen Burner)					

The average readings taken in the production areas are well below the MAC. The number of readings 1-2 X MAC increased in building 9201-1 over the previous month.

Readings taken in 9201-2 were higher than for the previous month. The majority of the high readings were received when the ceiling over the rubber shop and adjacent areas was being removed. The ceiling was highly contaminated with solvent. The stripping operation in the East end has been completed.

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-2-

The Sludge Burner, Bldg. 81-10, readings show a decided increase over those for the previous month. The furnace was being overhauled which resulted in higher readings than usual.

Coverall pockets of clothing in the bins of building 9723-18 have readings that indicate an increase over the previous month. Those in building 9723-19 remained at about the same level of contamination. The results for these two areas have previously been included in the Miscellaneous column.

James F. Morehead, Jr.

J. F. Morehead
Industrial Hygiene Department

Return

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of June.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,893	95.23	4.32	.45	.04
9201-5	3,872	98.60	1.32	.08	.02
9201-2					
(Stripping)	51	49.02	33.33	17.65	.12
9204-2	85	100.00	.00	.00	.00
9808					
(Pump Repair)	259	89.19	10.42	.39	.04
Beta 4					
(Extract)	99	71.72	18.18	10.10	.09
81-10					
(Sludge Burner)	589	71.48	20.54	7.98	-
9727-3 (Hydrogen Burner)	7	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	17	82.35	17.65	.00	.05
9723-19 (Cover-all Pockets)	17	82.35	11.77	5.88	.05

The average readings taken in the production areas are well below the MAC. The building average for 9201-4 continues to show a gradual increase over the previous month.

Readings taken in 9201-2 continued to be high. The entire track floor level and the east end of the lower level have been stripped. Solvent hazard for this building will continue to be potential as long as the high level of contamination exists in the basement area.

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Division of Union Carbide Corporation

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Subject: Solvent Air Analysis
for July 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.	
9201-4	4,135	88.22	10.93	.85	.05	487
9201-5	4,008	98.83	1.02	.15	.02	47
9201-2	15	73.33	-	26.67	.12	4
9201-2	85	100.00	.00	.00	.00	-
9808	164	96.34	3.66	-	.03	6
Pump Repair						
Beta 1	265	74.34	17.36	8.30	.08	68
Extract						
81-10	785	49.55	28.28	22.17	-	396
Sludge Burner						
9727-3 Hydro-gen Burner	11	100.00	.00	.00	.02	-
9723-18 Cover-all Pockets	17	64.71	23.53	11.76	.10	6
9723-19 Cover-all Pockets	17	94.12	.00	5.88	.06	1
Miscellaneous	80	40.00	31.25	28.75	-	7

The average readings taken in the production areas are well below the MAC. The building average for 9201-4 continues to show a gradual increase over the previous month. Emphasis has been directed toward an intensive clean-up program which was showing good results near the end of the month.

The readings for building 9201-2 were taken in the basement (ground) and indicate the potential solvent hazard exists.

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-2-

The sludge burner, bldg. 81-10 had high readings for the month. Emphasis on clean-up, etc., is being practiced to eliminate these high results.

The clean clothing in 9723-18 gave readings that were considerable higher than those in 9723-19 and each had an average greater than the previous month.

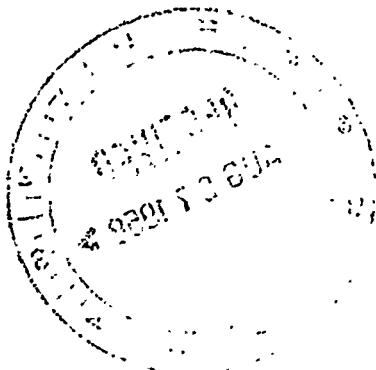
The miscellaneous samples were taken on either side of the road SW of building 81-10, in front of buildings 9720-9 and 9720-10. A more extensive survey program was conducted under the supervision of Mr. J. S. Reese.

James F. Morehead, Jr.
James F. Morehead
Industrial Hygiene Department

FW:am

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Division of Union Carbide Corporation

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Subject: Solvent Air Analysis
for August 1958

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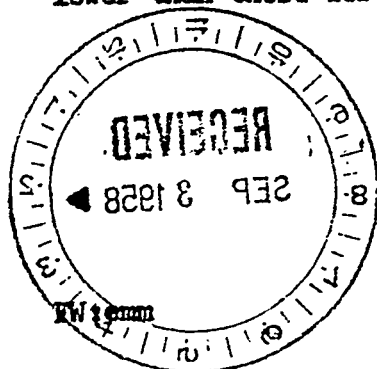
The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.	
9201-4	2,916	99.01	.89	.10	.03	29
9201-5	4,002	98.80	.88	.10	.02	48
9204-2	85	100.00	.00	.00	.00	-
9808	161	100.00	.00	.00	.02	-
Beta 4						
Extract	132	86.37	11.36	2.67	.05	19
81-10	681	51.62	27.61	17.77	.03	309
9727-3	10	90.00	.00	10.00	.03	1
9723-18 (Cover all Pockets)	17	94.12	5.88	.00	.05	1
9723-19 (Cover all Pockets)	17	94.12	5.88	.00	.05	1

The average readings taken in the production areas are well below the MAC. The intensive clean-up program conducted in 9201-4 has been very effective in lowering the building average.

The readings at the sludge burner (81-10) show a little improvement over the previous month.

Readings taken in the pockets of clean coveralls in 9723-18 and 9723-19 were lower than those for the previous month.



James F. Morehead
James F. Morehead
Industrial Hygiene Dept.

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UNION CARBIDE NUCLEAR COMPANY

Division of Union Carbide Corporation

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Subject: Solvent Air Analysis
for September 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

<u>ldg.</u>	<u># Samples Taken</u>	<u># Samples less than MAC</u>	<u># Samples 1-2 X MAC</u>	<u># Samples greater than 2 X MAC</u>	<u>ldg. Avg.</u>
9201-4	3,028	98.98	.39	.13	.03
9201-5	3,842	98.93	.89	.18	.02
9204-2	85	100.00	.00	.00	.00
9808	204	99.02	.49	.49	.04
Beta 4					
Extract	180	81.67	16.11	2.22	.06
81-10	651	76.19	14.44	9.37	-
9727-3	10	80.00	20.00	.00	.02
9723-18 (Cover-all Pockets)	17	88.24	5.88	5.88	.05
9723-19 (Cover-all Pockets)	17	100.00	.00	.00	.03
9201-2					
Basement	9	11.11	55.56	33.33	.20
9204-4					
West-end	32	71.88	15.61	12.51	-

The average for all production areas for the month of September remained below the MAC for solvent.

Additional solvent surveys were made to assist the H. K. Ferguson Company in the stripping of the west end of Beta 4 and electrical installation in the basement area of 9201-2. The previous recommendations made by Industrial Hygiene are being followed in these operations.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

JPM:ema

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UNION CARBIDE NUCLEAR COMPANY
Division of Union Carbide Corporation

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
3159 9201-4 ¹	3,189	99.06	.85	.09	.02
4161 9201-5	4,236	98.23	1.72	.05	.02
85 9204-2	85	100.00	.00	.00	.00
242 9808	253	95.65	3.95	.40	.04
125 Beta 4					
566 Extract 7	216	90.28	8.33	1.39	.05
10 81-10	713	79.39	12.76	7.85	-
14 9727-3	10	100.00	.00	.00	.00
14 9723-18 (Cover-all Pockets)	14	100.00	.00	.00	.03
14 9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.03
8946 Misc. *	26	88.46	.00	11.54	-

* Miscellaneous samples include readings taken in Buildings 9202, 9404-9 and 9995.

The average readings taken in the production areas were below the Maximum Acceptable Concentration of 0.1 milligrams of vapor per cubic meter of air sampled.

James F. Morehead, Jr.

Mr. James F. Morehead
Industrial Hygiene Department

FW:emm

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A Division of Union Carbide and Carbon Corporation

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Subject: Solvent Air Analysis
for November 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,659	98.80	1.05	.15	.03
3392 9201-5	3,473	97.67	1.98	.35	.03
9204-2	85	100.00	.00	.00	.00
219 9808	228	96.05	3.51	.44	.04
Beta 4					
132 Extract	144	91.67	8.33	.00	.05
325 81-10	572	65.56	22.73	11.71	.03
9727-3	10	80.00	20.00	.00	.03
10 9723-18 (Cover-all Pockets)	14	71.43	21.43	7.14	.06
12 9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.05
6862 Misc. *	23	86.96	4.35	8.70	-

* Miscellaneous samples include readings taken in Buildings 9404-9 and 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of vapor per cubic meter of air sampled.

Readings taken in the pockets of clean coveralls in 9723-18 and 9723-19 were higher than those for the previous month.

J. F. Morehead
Mr. James F. Morehead
Industrial Hygiene Department

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Subject: Solvent Air Analysis
for December 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	3,012	99.24	.70	.06	.02
9201-5	4,014	95.84	3.04	1.12	.03
9204-2	85	100.00	.00	.00	.00
9808	263	91.26	7.22	1.52	.04
Bldg. Extract	24	100.00	.00	.00	.02
81-10	681	87.37	8.22	4.41	-
9727-3	10	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.03
9723-19 (Cover-all Pockets)	17	100.00	.00	.00	.03
9404-9	12	100.00	.00	.00	.00
Misc.*	38	60.71	17.87	21.42	-

* Miscellaneous samples include readings taken in buildings 9995, 9204-4 (stripping) and 9201-2 (basement).

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

The high readings shown in the Miscellaneous column were received during the stripping of pipes, etc., in the basement of building 9201-2. Respirators were worn by personnel performing the cutting and removal of pipes.

James F. Morehead, Jr.

James F. Morehead
 Industrial Hygiene Department

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for January 1959

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,989	97.63	2.14	.23	.03
9201-5	3,853	88.86	9.06	2.08	.04
9201-2	85	100.00	.00	.00	.00
9808	252	91.27	7.54	1.19	.04
Bk Extract	12	100.00	.00	.00	.02
81-10*	341	95.31	2.64	2.05	.04
9727-3	22	90.91	.00	9.09	.04
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.02
9723-19 (Cover-all Pockets)	17	100.00	.00	.00	.02
9404-9	12	100.00	.00	.00	.01
Misc.**	10	100.00	.00	.00	.00

* Sampling was discontinued after 1-16-59 due to shut-down of operations.
 ** Includes samples taken in building 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

James F. Morehead, Jr.

James F. Morehead
 Industrial Hygiene Department

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for February 1959

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,717	97.24	2.43	.33	.03
9201-5	3,490	92.87	5.93	1.20	.03
9204-2	93	97.85	.00	2.15	.01
9808	228	93.42	6.58	.00	.03
Bld Extract*	12	100.00	.00	.00	.01
9727-3	22	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.02
9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.02
9404-9	205	94.63	4.39	.98	.03
Misc.**	398	96.48	2.76	.76	.03

* Beta 4 Extract area has been temporarily shut down.

** Includes samples taken for special study for buildings 9723-18 and 9723-19, and readings for 9201-2, 9401-3 and 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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Subject: Solvent Air Analysis
for March 1959**RESTRICTED DATA**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of March.

Ulig.	# Samples Taken	% Samples less than MAC	% samples 1-2 X MAC	% Samples greater than 2 X MAC	avg.
9201-4)	2,730	95.56	2.93	.51	.02
9201-5 (Pre-shut-down)	1,824	95.12	3.39	.59	.03
9201-5 (Shut-down)	2,003	72.94	20.87	6.19	.057
9204-2	0	-	-	-	-
9808	252	98.02	1.96	.00	.03
Bk Extract)	180	90.55	7.78	1.67	.057
81-10	310	37.74	6.45	5.81	-
9723-18 (General air & Lockers)	170	97.06	1.76	1.18	.01
9723-19 (General air & Lockers)	170	97.65	1.76	.59	.01
9404-9	252	96.03	2.78	1.19	.03
Misc.*	367	76.57	17.44	5.99	-

*Miscellaneous includes readings taken in 9201-2 during excavation operations, in the basement, and in the line 5 Bird Bath Area of 9201-2.

The average of vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of .1 mg per cubic meter of air. Building 9201-5 went out of production 3-13-59 and has gone into a shut-down operation that caused an increase of the vapor level in specific areas.

Readings were taken at 81-10 beginning 3-17-59 after start-up of the recovery program.

J. F. Morehead
 James F. Morehead
 Industrial Hygiene Dept.

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The Sludge Burner, Bldg. 81-10 has not been in production during the month. The high readings were received during dismantling and preparing to re-brick the furnace.

The Beta 4 Extract Building was put in use as a filter cleaning and recovery area for solvent and alloy. The present readings indicate a decrease for the level of solvent vapor contamination from those received during the earlier start-up. However, many readings continue to be greater than the MAC.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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Subject: Solvent Air Analysis
for April 1959**RESTRICTED DATA**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,958	96.55	2.94	.51	.037
9201-5					
(Shut-down)	2,208	75.72	21.51	2.77	.057
9204-2	85	100.00	.00	.00	.00
9808	204	97.06	2.45	.49	.03
Bld Extract	264	91.29	8.33	.38	.05
81-10	682	79.03	11.73	9.24	-
9404-9	264	99.24	.38	.38	.02
9723-18					
(General Air and Lockers)	170	96.47	1.18	2.35	.02
9723-19					
(General Air and Lockers)	170	97.06	1.18	1.76	.02
9723-18					
(Clothing)	16	100.00	.00	.00	.02
9723-19					
(Clothing)	12	83.33	8.33	8.33	.05
Hydrogen					
Burner	10	100.00	.00	.00	.02
Misc.*	386	66.58	29.53	3.89	-

* Miscellaneous includes readings taken in building 9201-2 during excavation operations in the basement, and in building 9995.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air.

J. F. Morehead
 James F. Morehead
 Industrial Hygiene Department

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Subject: Solvent Air Analysis
for May 1959

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,539	94.96	4.65	.39	.03
9201-5	1,653	79.80	13.61	6.59	.07
(Shut-down)					
9201-2	85	100.00	.00	.00	.00
9808	240	94.58	5.00	.42	.03
B4 Extract	240	96.25	2.08	1.67	.04
81-16	620	74.03	12.74	13.23	-
9104-9	240	98.33	1.25	.42	.02
9723-18 (Cover-all Pockets)	16	100.00	.00	.00	.02
9723-19 (Cover-all Pockets)	16	100.00	.00	.00	.01
9723-18 (General Air and Lockers)	106	97.17	1.89	.94	.01
9723-19 (General Air and Lockers)	136	96.32	1.47	2.21	.02
Hydrogen Burner	10	100.00	.00	.00	.01
Miscellaneous	226	68.58	22.57	8.85	-

* Miscellaneous includes readings taken in Building 9201-2 during excavation operations in the basement and building 9204-3.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air. The readings in building 9201-5 are higher than normal due to spills, reduction in air movement, etc., and are expected to remain at the average level of approximately 0.1 mg per cubic meter of air during stand-by.

J. F. Monahan
 James F. Monahan
 Industrial Hygiene Department

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UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List Date July 6, 1959
 Company
 Location Originating Dept. Industrial Hygiene

Answering letter date

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of June.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4 ¹	2,512	96.42	2.83	.75	.03
9201-5	745	86.98	11.14	1.88	.04
9204-2	36	100.00	.00	.00	.00
9808	120	99.17	.83	.00	.03
Bld. Extract	121	95.04	4.96	.00	.03
81-10	669	77.58	11.96	10.46	-
9404-9	264	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	16	87.50	.00	12.50	.04
9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.00
9723-18 (General Air and Lockers)	104	94.23	4.81	.96	.02
9723-19 (General Air and Lockers)	127	99.21	.79	.00	.01
Hydrogen Burner	10	100.00	.00	.00	.01
9201-2	68	39.71	41.18	19.11	-

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air.

J. F. Morehead
 James F. Morehead
 Industrial Hygiene Dept.

FW:emh

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UNION CARBIDE NUCLEAR COMPANY

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To (Name) List ✓ Date August 17, 1958
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Answering letter date

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,504	96.28	3.12	.60	.03
9201-5	695	96.53	2.92	.55	.04
9204-2	51	100.00	.00	.00	.00
9808	108	98.16	.92	.92	.02
B4 Extract	48	100.00	.00	.00	.03
81-10	682	80.65	10.41	8.94	-
9404-9	108	99.08	.92	.00	.01
9723-18 (Coverall Pockets)	18	100.00	.00	.00	.01
9723-19 (Coverall Pockets)	14	100.00	.00	.00	.01
9723-18 (General Air and Lockers)	130	100.00	.00	.00	.01
9723-19 (General Air and Lockers)	125	100.00	.00	.00	.00
9727-3	10	100.00	.00	.00	.00
9201-2 (Basement)	70	82.86	14.28	2.86	.06

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

for *Fred Williams*
James F. Morehead
Industrial Hygiene Department

FW:emh

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To (Name) List Date September 3, 1959
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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,320	94.57	4.05	1.38	.04
9201-5	691	92.33	6.51	1.16	.05
9204-2	51	100.00	.00	.00	.00
9808	108	88.89	.93	10.18	.04
B4 Extract	52	96.15	3.85	.00	.02
81-10	651	78.35	6.14	15.51	-
9404-9	96	100.00	.00	.00	.00
9723-18 (Coverall Pockets)	16	100.00	.00	.00	.01
9723-19 (Coverall Pockets)	13	100.00	.00	.00	.01
9723-18 (General Air and Lockers)	95	96.84	2.11	1.05	.01
9723-19 (General Air and Lockers)	92	100.00	.00	.00	.00
9201-2 (Basement)	49	83.67	14.29	2.04	.04
9727-3	10	100.00	.00	.00	.00

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

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To (Name) List Date October 5, 1959
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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,278	97.28	2.24	.48	.03
9201-5	770	95.84	3.51	.65	.04
9808	120	99.17	.83	.00	.02 (.03)
B4 Extract	53	96.23	3.77	.00	.02
81-10	641	81.12	7.96	10.92	-
9404-9	84	100.00	.00	.00	.02 (.01)
9723-18 (General Air and Lockers)	34	100.00	.00	.00	.00
9723-19 (General Air and Lockers)	34	100.00	.00	.00	.01
9201-2	47	48.94	51.06	.00	.08
9727-3	10	100.00	.00	.00	.02

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
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To (Name) List Date November 3, 1959
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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,258	98.67	3.0 1.33	.00	.02
9201-5	639	96.09	2.5 3.13	.78	.03
9808	180	100.00	.00	.00	.02
B4 Extract	22	77.27	5 18.18	4.55	.06
81-10	609	83.58	10 7.22	9.20	-
9404-9	48	100.00	.00	.00	.01
9201-2*	47	82.98	8 6.38	10.64	.05

* Taken in the basement and in the vicinity of the MG area.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
 James F. Morehead
 Industrial Hygiene Department

FW:emh

CONFIDENTIAL

CONFIDENTIAL

UNION
CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List Date December 1, 1959
Company Originating Dept. Industrial Hygiene
Location Answering letter date

Copy to J. P. Murray J. W. Ebert Subject Solvent Air Analysis
G. A. Strasser C. B. Newman for November 1959
H. T. Kite D. H. Rader
W. E. Heckert G. W. Flack
L. E. Burkhardt L. W. Bagwell
R. A. Walker File ✓
Neal Dow

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.	
9201-4	2,173	97.65	51	2.26	.09	.02
9201-5	644	95.81	27	3.88	.31	.04
9808	180	98.89	2	1.11	.00	.03
81-10	551	90.92	50	7.08	2.00	-
9404-9	48	100.00		.00	.00	.00
9727-3	10	100.00		.00	.00	.00
9201-2 *	11	90.91	1	9.09	.00	.05
Misc. **	12	75.00	3	8.33	16.67	.14

* Readings were in the vicinity of the MC area in the basement.
** Taken in the Davis Guage repair room, building 9737.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:emh

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UNION
CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List
Company
Location

Date

January 4, 1960

Originating Dept.

Industrial Hygiene

Answering letter date

Copy to

~~J. P. Murray~~
~~G. A. Strasser~~
~~H. T. Kite~~
~~W. E. Heckert~~
~~L. E. Burkhardt~~
~~R. Walker~~
~~Neal Dow~~~~J. W. Ebert~~
~~G. B. Newman~~
~~D. H. Rader~~
~~G. W. Flack~~
~~L. W. Eagwell~~
File

Subject

Solvent Air Analysis
for December 1959ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 10/10/01 BY 60322
person is prohibited.

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples Greater Than 2 X MAC	AVG.	
9201-4	2,537	96.22	96	3.47	.31	.02
9201-5	693	97.86	160	23.09	.00	.03
9808	180	98.89	2	1.11	.00	.03
81-10	578	90.66	54	4.67	4.67	--
9404-9	36	100.00		.00	.00	.00

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:jfw

CONFIDENTIAL

CONFIDENTIAL

UNION
CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)	L. W. Bagwell	J. D. McLendon	Date	February 1, 1960
Company	L. E. Burkhardt	J. P. Murray	Originating Dept.	Industrial Hygiene
Location	Neal Dow	C. B. Newman	Answering letter date	
	J. W. Ebert	D. H. Rader	Subject	Solvent Air Analysis
	G. W. Flack	G. A. Strasser		for January 1960
	W. E. Heckert	R. A. Walker		
Copy to	H. T. Kite	File		

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples Greater Than 2 X MAC	Avg.
9201-4	1,955	98.31	1.33	.36	.02
9201-5	797	92.60	5.65	1.75	.04
9201-5*	693	97.69	2.31	.00	.03
9808	192	99.48	.52	.00	.02
81-10	580	92.24	4.14	3.62	--
9404-9	48	100.00	.00	.00	.01
9727-3	25	100.00	.00	.00	.01
Misc.**	42	71.43	7.14	21.43	--

*Correction on December report?

**Miscellaneous samples were taken in buildings 9204-4, 9201-2, 9202, 9995, and 9737.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

RESTRICTED DATA

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J. F. Morehead
James F. Morehead
Industrial Hygiene Department

jfw

CONFIDENTIAL

CONFIDENTIAL

L. H. Bagwell J. D. McLondon Solvent Air Analysis
 J. L. Barnett J. P. Murray for February, 1960
 L. E. Byrnes C. B. Newman
 Neal New J. H. Ebert D. H. Baker
 G. H. Flach H. D. Thayer
 H. E. Hubert R. D. Helber
 H. J. Kite Lili

RECORDED DATA
 "This document contains data as defined in the Atomic Energy Act of 1954. Its transmission or disclosure of its contents in any manner to an unauthorized person is prohibited."

The following table presents a summary of solvent vapor sample findings in various plant area for the month of February.

Bldg	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples Greater Than 2 X MAC	AVG.
9201-4	2122	97.12	2.64	0.24	.02
9201-5	681	99.71	0.29	0.00	.02
9808	207	98.07	1.93	0.00	.02
81-10	585	93.67	1.37	4.96	—
9404-9	48	95.83	0.00	4.17	.02
MISC.*	30	56.67	10.00	33.33	—

* Miscellaneous samples were taken in buildings 9201-2 and 9203-1.

The average vapor readings taken in the production area continue to be below the maximum acceptable concentration of 0.1 milligram per cubic meter of air.

CONFIDENTIAL

Alpha-2

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO Mr. W. K. Whitson
LOCATION Building 9211

DATE September 11, 1952

ANSWERING LETTER DATE

ATTENTION

COPY TO Mr. G. H. Clewett

Dr. C. R. Sullivan, Jr.
File

SUBJECT Special Mercury Study

Plant, Building 9201-2

APPROVED FOR PUBLIC RELEASE

P. K. McKenney 10/28/75
Technical Information Office Date

On September 8, 1952 general ventilation through the P-Plant in Building 9201-2 was varied and mercury contamination in the air was measured. Velocity measurements were made at the door and louver located in the west end of the plant and the volume of air flowing through these openings was computed. The purpose of this study was to observe the effects of general ventilation under varied conditions on the level of mercury contamination in the air throughout the plant.

The concentration of mercury in air at the same sampling points is given in Table 1 for each ventilation condition. In condition #1, the exhaust fans were not in operation on second floor, east end door of plant was closed, west end door open and local and general exhaust ventilation on in plant. The flow of air which measured approximately 11,000 cfm was from west to east. Under condition #2, the exhaust fans were in operation on second floor, rest of plant maintained as in condition #1. Flow of air was from west to east and measured approximately 12,500 cfm. Condition #3, fans running on second floor, door open at west and east ends of plant, local and general exhaust ventilation on in plant. Flow of air was from east to west and measured approximately 8,000 cfm. Under conditions #1 and #2, the general level of mercury contamination was the same throughout the plant with the highest readings in the east area; whereas under conditions #3, the general level of mercury contamination was somewhat lower throughout the plant with the highest findings recorded in the west area.

Local ventilation at the trays seemed adequate. Cooling system on trays in operation on the day of sampling and very little mercury was observed on the floor or equipment.

On September 10, 1952, routine air sampling was done throughout the plant under conditions similar to those described under #1 and results are listed in Table 2. The general level of mercury contamination was very high throughout the plant. Considerable mercury was found in the inlet air through door and louver in west end of plant which apparently was coming

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THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

~~RESTRICTED~~

~~SECURITY INFORMATION~~

from the distilling area (Samples 12, 13, 14 and 17). Also very high mercury readings were found at open 55 gallon drums located adjacent to west end door (Sample #16). Abnormally high mercury findings were found at pump stations as indicated by Sample #15. In general housekeeping appeared to be satisfactory since very little mercury was detected on equipment and floors. It appears that these other sources of mercury vapor should be controlled since the problem of control does not depend entirely upon good housekeeping practices.

W. H. Baumann, Jr.

W. H. Baumann,
Health Physics Department

WHB:ms

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~~SECURITY INFORMATION~~

Table 1

~~CONFIDENTIAL~~
~~EXPERIMENTAL DATA~~
~~CONFIDENTIAL~~

Sample #	Operation	Location	Hg - Air Concentration mg/M ³		
			Condition #1	Condition #2	Condition #3
1	General Air Trays 1-16	Sampling 5' from exhaust fan on exhaust level	.17	.14	.03
2	"	Sampling over test table east end @ B.L.	.17	.14	.02
3	"	Sampling at walkway 10' from tray #1, @ B.L.	.14	.1	.07
4	"	" tray #3	.11	.11	.05
5	"	" #5	.26	.19	.04
6	"	" #7	.19	.16	.03
7	"	" #9	.17	.13	.04
8	"	" #11	.11	.11	.17
9	"	Sampling at control panel west end @ B.L.	.13	.10	.11
10	"	Sampling over salvage area @ B.L.	.13	.10	.10
11	"	Sampling over test bench west end @ B. l.	.10	.08	.10
12	"	Sampling 5' from door west and inside plant @ B. l.	.00	.01	.11
13	"	Sampling inside post # 12, @B.L.	.00	.00	.22

~~CONFIDENTIAL~~
~~EXPERIMENTAL DATA~~
~~CONFIDENTIAL~~

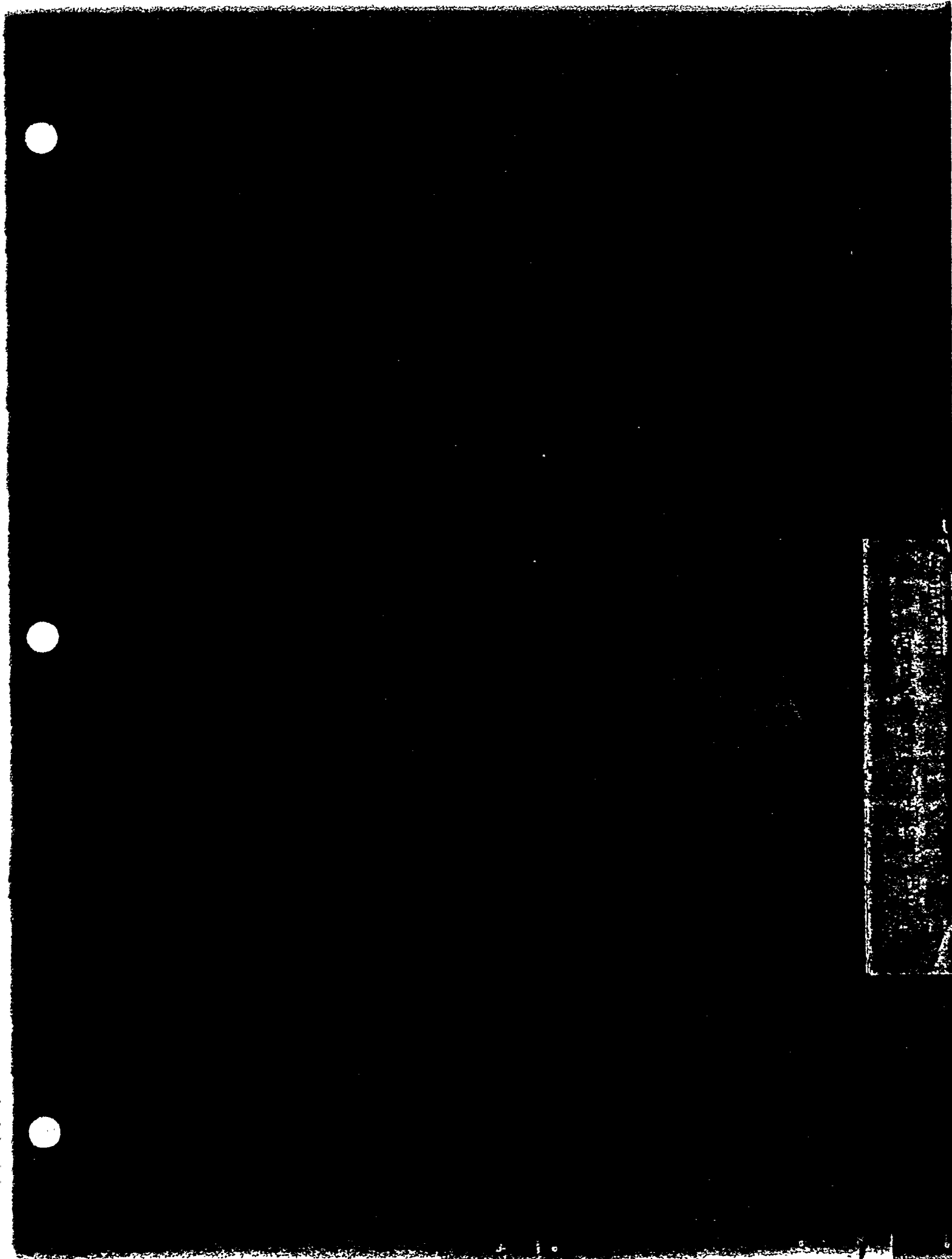
RESTRICTED

SECURITY INFORMATION

Table 2

Sample No.	Operation	Location	Hg-Air Concentration mg/m ³	Remarks
1	General Air Concentrations	5' from exhaust fan at exhaust level height.	.35	Cooling system in operation
2		B.L. over test table east end.	.41	
3		B.L. at walkway, 18" from tray #1.	.39	
4		" " " " " " " " " " " "	.43	
5		" " " " " " " " " " " "	.53	
6		" " " " " " " " " " " "	.45	
7		" " " " " " " " " " " "	.44	
8		" " " " " " " " " " " "	.30	
9		B.L. by control panel west end.	.25	
10		B.L. over salvage area west end.	.22	
11		B.L. over test bench west end.	.22	
12		5' from door - west end, inside AB.L.	.10	
13		B.L. at post #12, at door - west end.	.16	
14		At louvers west end.	.30	
15		Above pump stations between trays.	1.1	
16		Above open 55 gal. drums, west end.	.75	
17		By door leading from distilling area.	.16 .33	

DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS	FROM	THROUGH	CODE NUMBER	
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z	1951	1957	2000-10-11 Y-12 2090-IH-4	
Box Number <u>2</u> of <u>5</u>	LOCATION IN RECORDS CENTER			
	Indef.	SECTION 20	TIER 9	DR. 16
CLASS OF FILE RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>	RECORDS VERIFIED BY: Bill Everett			DATE 2/11/58
TRANSFER OF RECORD				
T-2078				



DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. MS/ChR2-0197	Author's Telephone No. 6-0263	Acct. No. 2366000 3	Date of Request 10/18/95
Unclassified Title: SOLVENT: SPECIAL STUDY - P-PLANT, BLDG 9201-2 (2090-1H-4)			4Q52

Author(s) Requestor: Steve Wiley

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
 Document will be distributed at meeting ☒ No ☐ Yes
 Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
 Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

Title(s): U Abstract: —
 DOCUMENT: Level U Category —
[Signature] 10/19/95
 Signature Date

DOCUMENT REQUEST APPROVED (Division or Department)

[Signature] 10/18/95
 Signature Date

 Signature Date

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APPROVAL AND RELEASE

Date Received _____ Date Initiated 10/18/95
☒ CLASSIFICATIONS:
 Title(s): U Abstract NA
 DOCUMENT:
 Level U Category +
 Weapons Data [Signature] Sigma —
10/19/95
 Y-12 Classification Office Date

☐ Editor: _____ Date _____
☒ Wanted / P. McKenney
 Patent Office _____ Date _____
☐ _____ Date _____
☐ _____ Date _____

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P.R. McKenney 10/24/95
 Technical Information Office Date

Conditions/Remarks:

File

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO Mr. E. G. Struxness
LOCATION Bldg. 9711-1

DATE Nov. 21, 1952

ANSWERING LETTER DATE

ATTENTION
COPY TO File

SUBJECT Mercury Air Concentrations

Dear Sir:

After making a study to determine the Mercury Air Concentrations in and around post #12 in building 9201-2, and finding the air slightly contaminated, it is suggested that post #12 be moved from its present location to the opposite end of the corridor, where the Mercury Air Concentration was not detectable with the General Electric Vapor Detector.

It may also be suggested that the area between the present location of post #12 and the suggested location of post #12 be used as a smoking lounge, where Mercury Air Concentration is negligible, and eliminating smoking in corridor between Evaporating Area and Pilot Plant.

The following suggestions should be employed if post #12 should remain in the same location:

1. Tobacco ^{in any} ~~form~~ ^{not} should be permitted in or around post #12.
2. Smoking in or around post #12 should not be tolerated.
3. Food should not be permitted in or around post #12.
4. All personnel in or around post #12 who do not wear gloves of impervious material, should wash hands before eating or smoking.

Health Physics Inspectors:


Merwyn Sanders

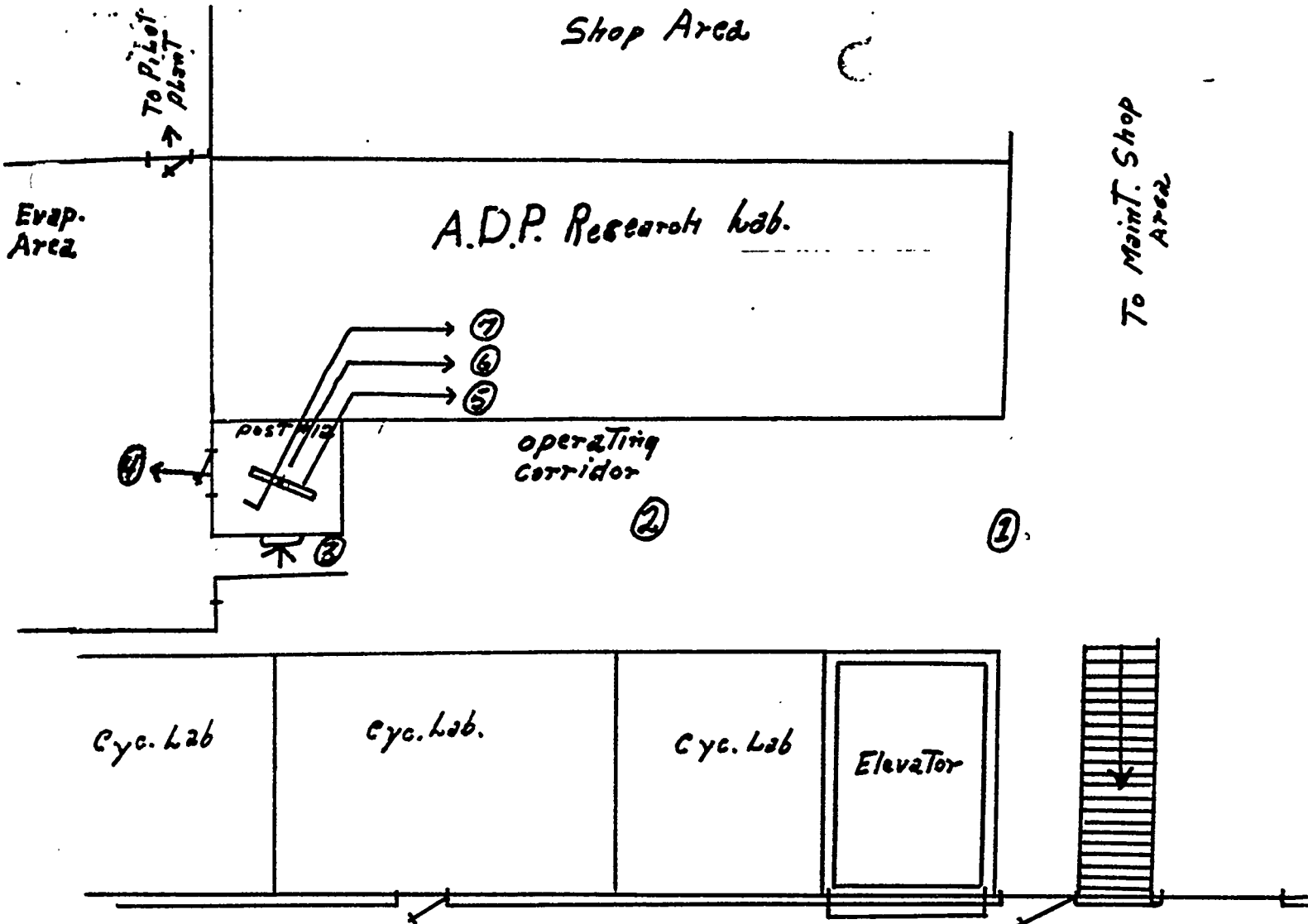

G. B. Anderson

Camp Unit #	Location	11/18/52			11/19/52			11/20/52		
		mg/193	mg/193	mg/193	mg/193	mg/193	mg/193	mg/193	mg/193	mg/193
1	Bk center of Corridor 35' from Guard Post	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Bk center of Corridor 15' from Guard Post	—	—	—	—	—	—	—	—	—
3	Bk at Turnstike	—	—	—	—	—	—	—	—	—
4	Bk at door to Guard Post	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	2" from Badges in Guard Post	.03	.03	.03	.03	.03	.03	.03	.03	.03
6	Bk center of Guard Post	.02	.02	.02	.02	.02	.02	.02	.02	.02
7	2' from Chart in Guard Post	—	—	—	—	—	—	—	—	—
8	AT Guard's hands before Rubbing	—	—	—	—	—	—	—	—	—
9	AT Guard's hands AFTER Rubbing	—	—	—	—	—	—	—	—	—

Lawless and Anderson

Sample No.	Location	11-18-52 mg/M ³	11-19-52 mg/M ³	11-20-52 mg/M ³
1	BL center of corridor 35' from Guard Post	0.0	0.0	0.0
2	BL center of corridor 15' from Guard Post	---	.02	.02
3	BL at turnstile	---	.06	.02
4	BL at door to Guard Post	0.0	.03	.10
5	2" from badges in Guard Post	.03	.03	.09
6	BL Center of Guard Post	.02	.02	.07
7	2' from floor in Guard Post	---	.06	.08
8	At Guard's hands before rubbing	---	.02	.08
9	At Guard's hands after rubbing	---	.10	.14

MS:ms



North Central Portion Bldg. 9201-2

- ① Bl center of Corridor 35' From Guard Post
- ② Bl center of Corridor 15' From Guard Post
- ③ Bl AT Turnstile
- ④ Bl AT door to Guard Post
- ⑤ 2" From Badges in Guard Post
- ⑥ Bl center of Guard Post
- ⑦ 2' From Floor in Guard Post

Sanders and Anderson

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>MS/CHR2-0198/DEL REV</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>2366000 3</u>	Date of Request <u>10/18/95</u>
Unclassified Title: <u>SOLVENT: SPECIAL AIR CONTAMINATION - OREX Bldg. 9202</u>			
<u>(1953) (2090-1H-4)</u>			

Author(s) Requestor: Steve Wiley

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper

☐ Oral Presentation (Identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes

Document will be distributed at meeting ☒ No ☐ Yes

Document has patent or invention significance ☐ No ☐ Yes (Identify) _____

Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

Title(s): U Abstract: -

DOCUMENT: Level CONFIDENTIAL Category RD

[Signature] 10/19/95

Signature Date

DOCUMENT REQUEST APPROVED (Division or Department)

[Signature] 10/18/95

Signature Date

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	<u>S.W. Wiley</u>		
	<u>R.M. Keyser</u>		

Distribution Remarks: Unlimited (Chem Risk)

APPROVAL AND RELEASE

Date Received _____ Date Initiated 10/18/95

☒ CLASSIFICATIONS:

Title(s): U Abstract NA

DOCUMENT: U (w/rel) Category -

Level U (w/rel) Category -

Weapons Data [Signature] Sigma -

[Signature] 10/19/95

Y-12 Classification Office Date

☐ Editor _____ Date _____

☒ Waived P. McKenney _____ Date _____

☐ Patent Office _____ Date _____

☐ _____ Date _____

☐ _____ Date _____

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P. McKenney 10/20/95

Technical Information Office Date

Conditions/Remarks:

MS/CHR2-0198/DEL REV

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DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS		FROM	THROUGH	CODE NUMBER
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z		1951	1957	2000-10-14 Y-12 2090-IH-4
BOX NUMBER <u>2</u> OF <u>5</u>		LOCATION IN RECORDS CENTER		
CLASS OF FILE		SECTION	TIER	DR.
RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>		Indef. 20	9	16
		RECORDS VERIFIED BY:		DATE
		Bill Everett		2/14/58
TRANSFER OF RECORDS				
T-2078				

SOLVI I

1953

Special Air Contamination - OREX

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO
LOCATION J. B. Geasland
9720-6

ATTENTION
COPY TO File

DATE March 26, 1953

ANSWERING LETTER DATE

SUBJECT Instantaneous Mercury
Vapor Detector

The Instantaneous Mercury Vapor Detector made by [redacted] has greater sensitivity than others on the market ([redacted] is the only other manufacturer). The [redacted] instrument has two ranges 0-0.1 mg/M³ and 0-0.3 mg/M³ whereas the other instrument has one range 0-3.0 mg/M³. The maximum permissible limit for mercury vapor is 0.1 mg/M³.

The resolving time in the former instrument has been reduced by a factor of four to five - in comparison with presently available equipment. Calibration drift is well within 1%.

W. H. Baumann
Health Physics Department

WHB:cs

APPROVED FOR PUBLIC RELEASE

P. L. McKenney 10/20/53
Technical Information Office Date

Bill B

Σ
7-6

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO Mr. J. B. Geasland
LOCATION Bldg. 9720-6

DATE June 23, 1953

ATTENTION
COPY TO File
NoY-12RC

ANSWERING LETTER DATE

SUBJECT Justification for Purchase
of Mercury Vapor Detector

Several years ago we used a "Lamp Type" Mercury Vapor Detector which utilized the same principle, namely, discoloration of selenium sulfide paper. This instrument never proved entirely satisfactory in use in various working areas at Y-12 since temperature and air movement affected results.

The instrument ordered at this time operates relatively independent of both temperature and air drafts and is of relatively new design. The instrument will be used to supplement the electronic devices (Vapor Detector) which give high bias when interfering air contaminants are present in the atmosphere under test.

SIGNED BY
E. G. STRUXNESS

Edw. G. Struxness
Health Physics Department

EGS:WHB:s

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO Edw. G. Struxness
LOCATION Bldg. 9202

DATE September 24, 1953

ANSWERING LETTER DATE

ATTENTION
COPY TO

File ✓

SUBJECT Mer Vac Cleaner Investigation

I. Purpose

Establish an operation procedure for the Mer Vac Cleaner which will provide more effective service with minimum exposure to operating personnel.

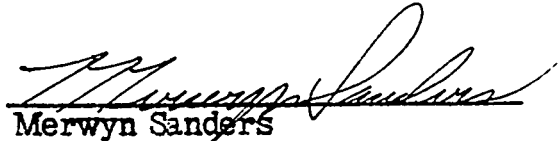
II. Objectives

- A. Formulation of pre-operation check list, e.g., check vacuum hose, traps, connection and etc.
- B. Determine the performance of the Mer Vac Cleaner under different operating conditions.
 - 1. Moist operation
 - 2. Dry operation
 - 3. Continuous operation (dry and moist)
 - 4. Short operations (dry and moist)
 - 5. Regeneration capacity of Hopcalite
- C. Determine a method of reactivation of spent Hopcalite.

III. Equipment

- A. Mer Vac Cleaner
- B. Continuous Mercury Vapor recorder
- C. Supply of Mercury (30 lbs)
- D. Photographic Tray
- E. Furnace (with temperature control)
- F. Miscellaneous
 - 1. One 2 gallon bottle
 - 2. Suitable hose (rubber or tigon).
 - 3. Rubber stoppers, connections and etc.

The equipment to be employed in the proposed investigation can be obtained within the area of Y-12 at a minimum cost. This project will be accomplished on a part time basis, with little, if any interference of the normal routine work schedule.

A handwritten signature in cursive script, appearing to read 'Merwyn Sanders', is written over a horizontal line.

Merwyn Sanders
Inspector, Industrial Hygiene Section
Health Physics Department

MS:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO H. M. McLeod
LOCATION Bldg. 9202

DATE October 23, 1953

ANSWERING LETTER DATE

ATTENTION
COPY TO

G. H. Clewett
C. R. Sullivan, Jr., M.D.
L. W. Bagwell
Edw. G. Struxness, Y12RC
File

SUBJECT Solvent Air Contamination,
OREX

Since solvent air contamination levels in OREX, Building 9202, have been consistently over the MPL, the following information is submitted for your consideration.

The weekly average of the solvent vapor findings for OREX is presented on the attached graph. It is readily observed that the average concentration of solvent in air has been equal to or above the MPL of 0.1 mg/M³ over the last twelve operating weeks. Such consistently high air findings suggest that immediate action be taken to bring the level of solvent contamination within the MPL. Unless some remedial measures are taken at this time, it is felt that the contamination condition will not improve but become progressively worst.

The following recommendations are suggested to reduce the level of solvent contamination in air.

1. Installation of mechanical ventilation, both supply and exhaust. Since most of the present air movement is due to natural ventilation coming from open windows and doors, this measure will be especially important with the approach of cold weather.
2. Instigation of a consistent and conscientious clean up program. In the past the housekeeping in this area has been erratic and insufficient.

3. Some sort of sealer should be placed on the floors. Surveys have shown that the floors are one of the chief sources of air borne vapors. In order to prevent the presently absorbed solvent from vaporizing and future solvent spills from being absorbed, it appears that some method of sealing the concrete will be necessary to eliminate this source of air contamination.

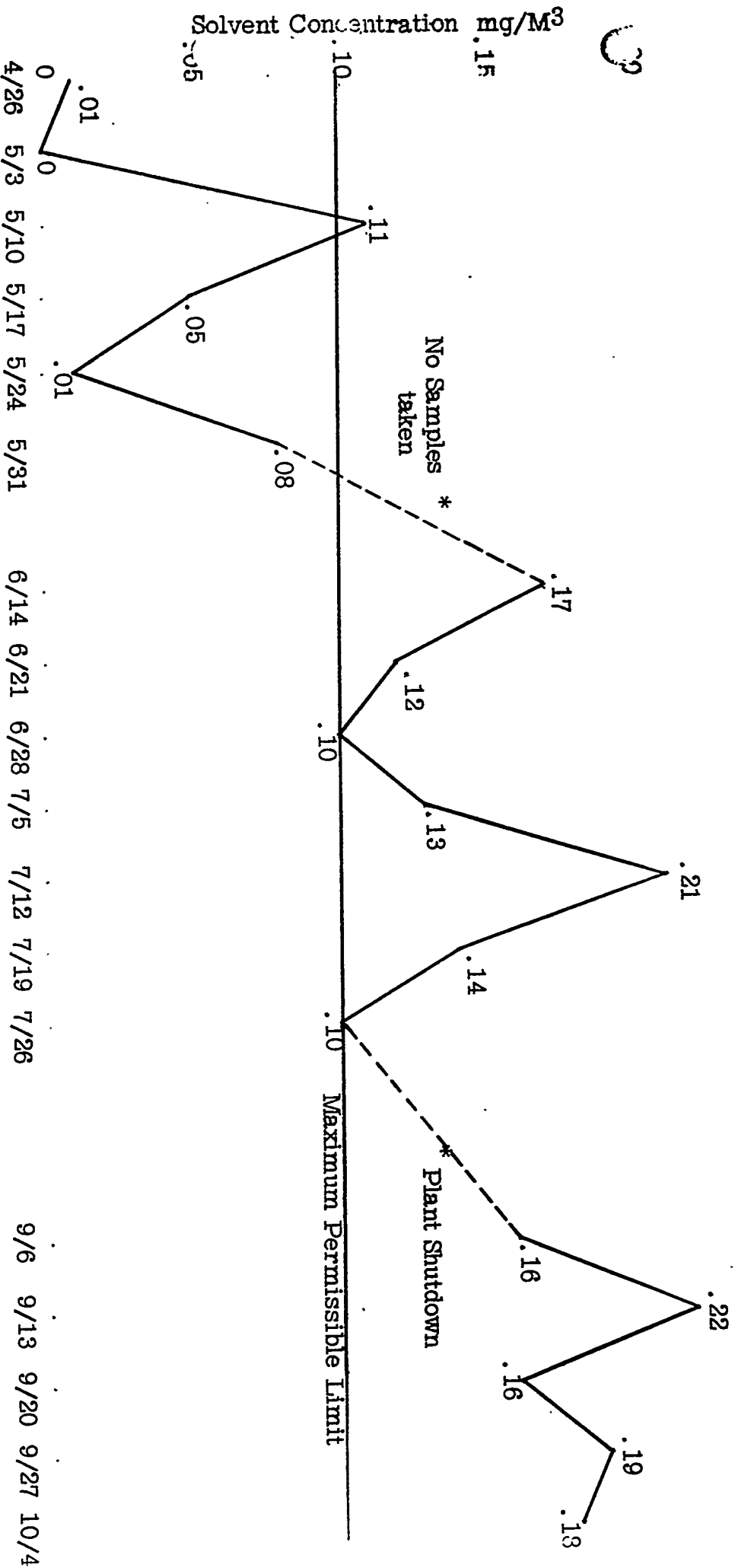
Original signed by W. H. Baumann

W. H. Baumann
Industrial Hygiene Section
Health Physics Department

CMW:cs

Overall Weekly Average Building 9202

.25



1 2 5 3

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

ANALYTICAL SECTION

TO E. C. Long
LOCATION Bldg. 9202

ATTENTION
COPY TO File

DATE October 26, 1953

NO PREPARATION OF
ANSWERING LETTER DATE

Sample Identification

SUBJECT Solvent Contamination in Dark Room 9202

Tests Requested

Report in Form

Preparation of

The following impinger samples were taken in the Dark Room of Building 9202 to determine the solvent air concentration. Our findings indicate low concentration of solvent vapor. The following samples are listed below for your consideration.

Sample No.	Location	Solvent Concentration mg/cfm
1	BL center of dark room	.0003
2	BL center of dark room	.0003

Priority

Merwyn Sanders
Merwyn Sanders
Health Physics Inspector

MS:cs

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. _____

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator <u>Brimmance</u> Date <u>10/19/53</u>	Sample Identification <u>1-1 4/2-</u>
Address <u>H.P.D.</u> Phone <u>48-211</u>	<u>2-14 2-2</u>
Acc'ting Chg. _____	Tests Required _____
	Report in Term of <u>mg</u>
	Precision Required <u>0.005 mg</u> Priority <u>1</u>
	Total No. of Samples <u>1</u>

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

Concentration will be lower than .01 mg/lit³

Brimmance

Approved for Analysis John C. Gallin Laboratory Priority _____

Laboratory No.	Originator's Identification	Results
	1-1	0.022 mg / sample
	1-2	0.005 mg / sample
	2-1	0.035 mg / sample
	2-2	0.003 mg / sample
	water blank	.020 mg / 250 ml

Analyst F.K. Hausch Date Completed 10-20-53 Approved by _____

TO: Mr. J. M. Case

SUBJECT: Starting of OREX Pilot Plant Operations

COPY TO: E. R. Watkins (6)
A. A. Groppe (6)
C. B. Hopkins (6)
C. B. Newman (6)
D. G. Hill (6)
L. G. Bagwell (4)
E. G. Struxness (3)
G. H. Clewett (3)
G. W. Mitchel
J. C. Bowles
F. V. Stanfel
W. C. Moyers
File (WLM) Y-12RC

Plans are now made for the ORNL Research group to start operations on a 3-shift basis in the OREX pilot plant. April 13, 1954 will be started on this date. Solvent and other process solutions and materials will be introduced in the plant within the following week or ten days as systems are completed and released for operations. This notice is prepared for the purpose of informing the maintenance staff concerning the schedules as well as some of the suggested procedures in order to reduce safety and fire hazards which exist in this building. When operations are started the following rules will apply in the OREX pilot plant area:

1. Smoking - No smoking will be permitted in any process area including all floors, penthouse, and roof. Also no smoking will be allowed near the carbide waste tank on the north side of the building. These areas will be posted with "No Smoking" signs. Smoking will be permitted in the third floor office, change rooms, toilets, stairway between third floor and acid room, main north-south corridor on first floor, maintenance shops and areas outside of the building except as noted above.
2. Eating - No food, drink or tobacco will be allowed in the pilot plant process areas (same as No Smoking areas).
3. Clothing - Recommendations have been made by the Health Physics Department that fresh clothes be worn each day by all maintenance people who must work in process areas.

Safety and First Aid procedures relative to hazards encountered in the operation of this plant are being prepared by the Safety Department in conjunction with the Health Physics Department. The Safety and Fire Departments will assume the responsibility of maintaining fire maintenance personnel with the safety and fire hazards peculiar to the operation and the uses of necessary protective equipment.

During the time from the beginning of operation of this plant until the plant is in full operation, a considerable number of maintenance personnel will be working in process areas on the day shift. We realize that certain hazards exist whereby it is possible that these people may perform some operation on piping or equipment which may be filled with process solutions. In order to avoid the possibility of accidents, we are requesting that no process line be cut or in any way opened without the specific approval of the field engineer, Mr. R. V. Stenial, who will have double checked with the operating foreman in charge before issuing any instructions or opening any line or vessel. It must be pointed out that extreme care and the greatest cooperation must be exercised by all concerned in order to avoid accidents and/or serious operation delays due to mistakes during the period of time when operations start up in progress along with the completing of the installation of the plant.

HDD:hys

OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>MS/Chr2-0216</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>2366000 3</u>	Date of Request <u>10/19/95</u>
Unclassified Title: <u>AIR ANALYSIS: SOLVENT AIR ANALYSIS - BLDG 9202, 1954</u> <u>(WORK SHEETS) (2090-1H-7)</u>			

Author(s) Requestor: Steve Wiley

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
 Document will be distributed at meeting ☒ No ☐ Yes
 Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
 Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

Title(s): Unclassified Abstract: -

DOCUMENT: Level Unclassified Category -

R.F. Quinn 23 Oct 1995
Y-12 Plant Classification Office Date

DOCUMENT REQUEST APPROVED (Division or Department)

[Signature] 10/19/95
 Signature Date

Signature Date

THE REMAINDER OF THIS FORM TO BE COMPLETED BY THE TECHNICAL INFORMATION OFFICE
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☐ External Distribution
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Distribution:	UCN-7721B	DOE F-1332.1B	Docu-
Y-12 Central Files	Y-12 RC	Y-12 RC	Y-12 RC
TIO File	<u>L.L. McCauley</u>		
	<u>S.W. Wiley</u>		
	<u>R.M. Keyser</u>		

Distribution Remarks: Unlimited (ChemRisk)

APPROVAL AND RELEASE

Date Received	Date Initiated
<input checked="" type="checkbox"/> CLASSIFICATIONS:	
Title(s): <u>U</u>	Abstract: <u>NA</u>
DOCUMENT:	
Level: <u>U</u>	Category: <u>-</u>
Weighting: <u>1</u>	Sigma: <u>-</u>
<u>[Signature]</u> Y-12 Classification Office	<u>10/23/95</u> Date

☐ Editor _____ Date _____
☒ Patent Office [Signature] _____ Date _____
☐ _____ Date _____
☐ _____ Date _____

APPROVED FOR: ☐ Declassification ☐ Release subject to use of the following administrative markings and conditions:
☐ Disclaimer ☐ Copyright ☐ Patent Caution ☐ Other

[Signature] 10/24/95
 Technical Information Office Date

Conditions/Remarks:

MS/CHR2-0216

PLEASE DO NOT REMOVE THIS COVER SHEET

DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS	FROM	THROUGH	CODE NUMBER	
Air Analyses, Reports, information, correspondence. Enclosed in box is a list of all folders included in the box.	1953	1957	2090-IH-4 Y-12 2090-IH-4	
<p>A through L</p> <p>APPROVED FOR PUBLIC RELEASE</p> <p><i>10/24/55</i> <i>DOE Hold 1324.7</i></p>				
BOX NUMBER	LOCATION IN RECORDS CENTER			
Technical Information Office	Indef.	SECTION 20	TIER 9	DR. 15
CLASS OF FILE	RECORDS VERIFIED BY:		DATE	
RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>	Bill Everett		2/14/58	
TRANSFER OF RECORDS				

ANALYSES

1954

Solvent Air Analysis -- Bldg. 9202
(Work Sheets)

Solvent Air System
for Bldg. 2200

Air Analysis for the program
is divided into three periods. The
Operation period, the Evacuation period
and the Evacuation period. The
of the Operating. The Evacuation period
with each period.

I. Operation Period (Feb. 1 - Feb. 24)

- (a) Feb. 3 - Evacuation period was put into
operation.
- (b) Feb. 4 - Evacuation period was put into
operation.
- (c) Feb. 12 - Evacuation period was put into
operation.
- (d) Feb. 21 - Evacuation period was put into
operation. The date was
very fast and messy.
- (e) Feb. 22 & 23 - Evacuation period was
put into operation. Major spills
were observed.
- (f) Feb. 24 - Evacuation period was put into
operation. The date was
very fast and messy.

- were open throughout the day. The door was open for a long time. Heating system off during the night period.
- (b) Feb. 25 - High wind throughout the day. The first and second floors were kept warm. The third floor was not.
- (c) Feb. 26 - Operations normal. Heating average. The door was open.

IV. Renovation Work

- (a) Mar. 1 - Solar heating on first floor. No wind. Temperature above normal. The second floor was not.
- (b) Mar. 3 - Solar heating on first floor. The second, third and fourth floors were not. The wind was not.
- (c) Mar. 4 - Heating on first floor. Average. The door was open.
- (d) Mar. 5 - Solar heating on first floor. The second, third and fourth floors were not. The wind was not.
- (e) Mar. 8 - High wind. The second, third and fourth floors were not. The wind was not.
- (f) Mar. 9 - Still high wind. The second, third and fourth floors were not. The wind was not.
- (g) Mar. 10 - No wind. The second, third and fourth floors were not. The wind was not.

first, mezzanine, and second floor,
loading solvent flask on first floor,
some pipes and pumps disconnected.

- (H.) Mar. 11 - Low temperature on first floor, spills
throughout the area, no windows
open.
- (I.) Mar. 16 - Low temperature and poor air
circulation on first floor. Air circulation
poor on mezzanine and second floor.
Solvent spills on third floor.
- (J.) Mar. 18 - Draining solvents from tanks on first floor.
Washing columns at South Wall on
mezzanine - temperature high on
second and third floors.

III. Evacuation

- (A) Mar. 23 - No major spills in area.
Temperature higher than usual
on mezzanine, second and third
floor. Circulation scattered on
mezzanine floor. Washing filter
press room on third floor. Flush
pipe line in greenhouse.
- (B) Mar. 24 - Several spills on floor by
the entire floor. Temperature high
than usual on all floors.
- (C) Mar. 26 - Cooler on all floors. Spills
in small patches distributed
throughout area.
- (D) Mar. 29 - Windows open on all floors.

Solvent spillage

- (E) Mar. 30 - Reconstructed the first floor.
- (F) Mar. 31 - Penthouse completed, all operators removed from suspect area.
- (G) Apr. 5-7 - No activity in the area.

Conclusions:

It is suggested that as a means of keeping solvent levels below the toxic limit, the following activities be undertaken:

1. A concerted effort to curb housekeeping.
2. Make proper equipment an improvement in an area.
3. Periodic check on equipment in operation to curb spillage.
4. Proper waste disposal be made available.

W. B. Gordon
Ind. Hygiene Section

Concentration mg/m³

Shut-Down

PLANT IN OPERATION

RENOVATION

Evaporation

100

100

100

100

100

100

Approved for Sampling
Periodic

Toxic Limit

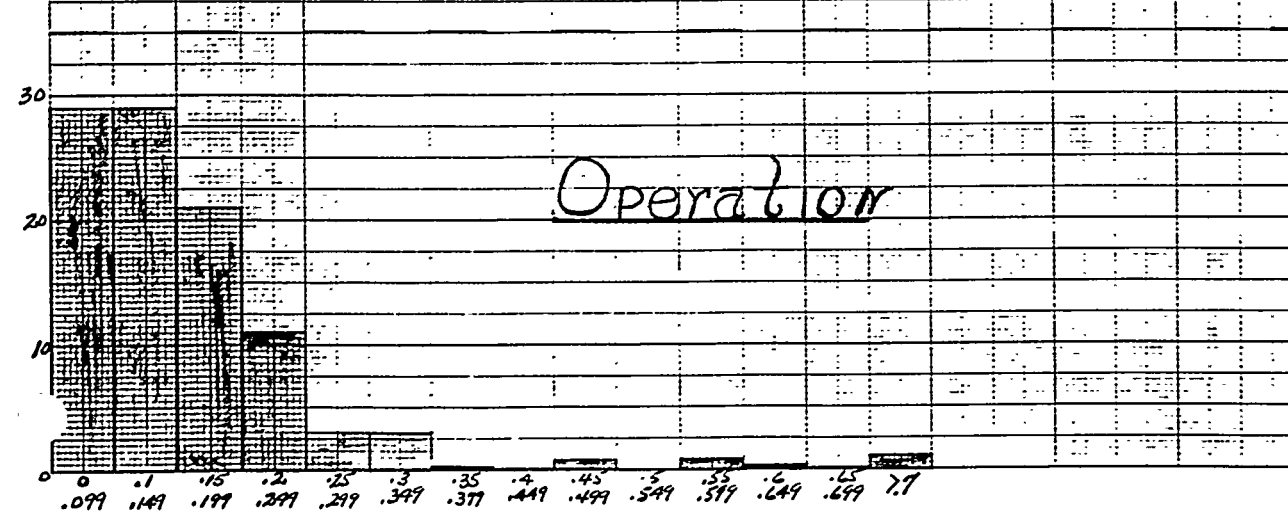
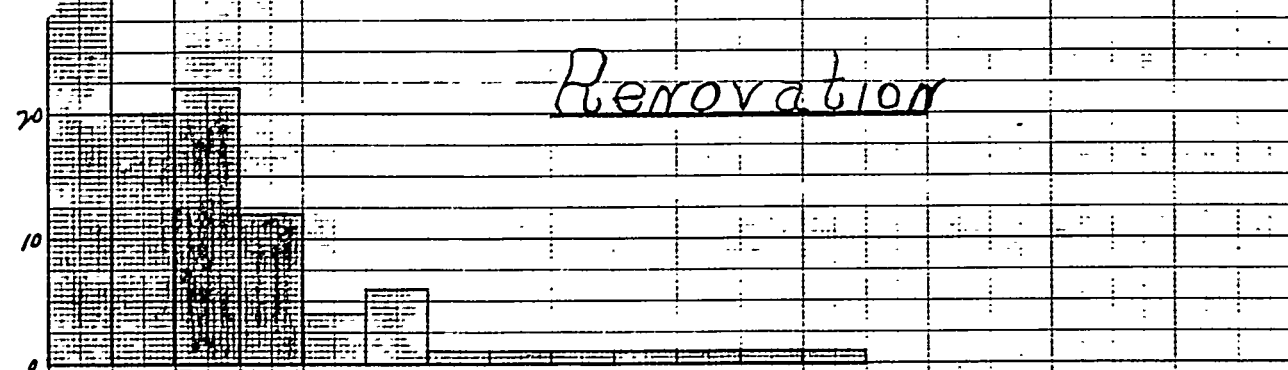
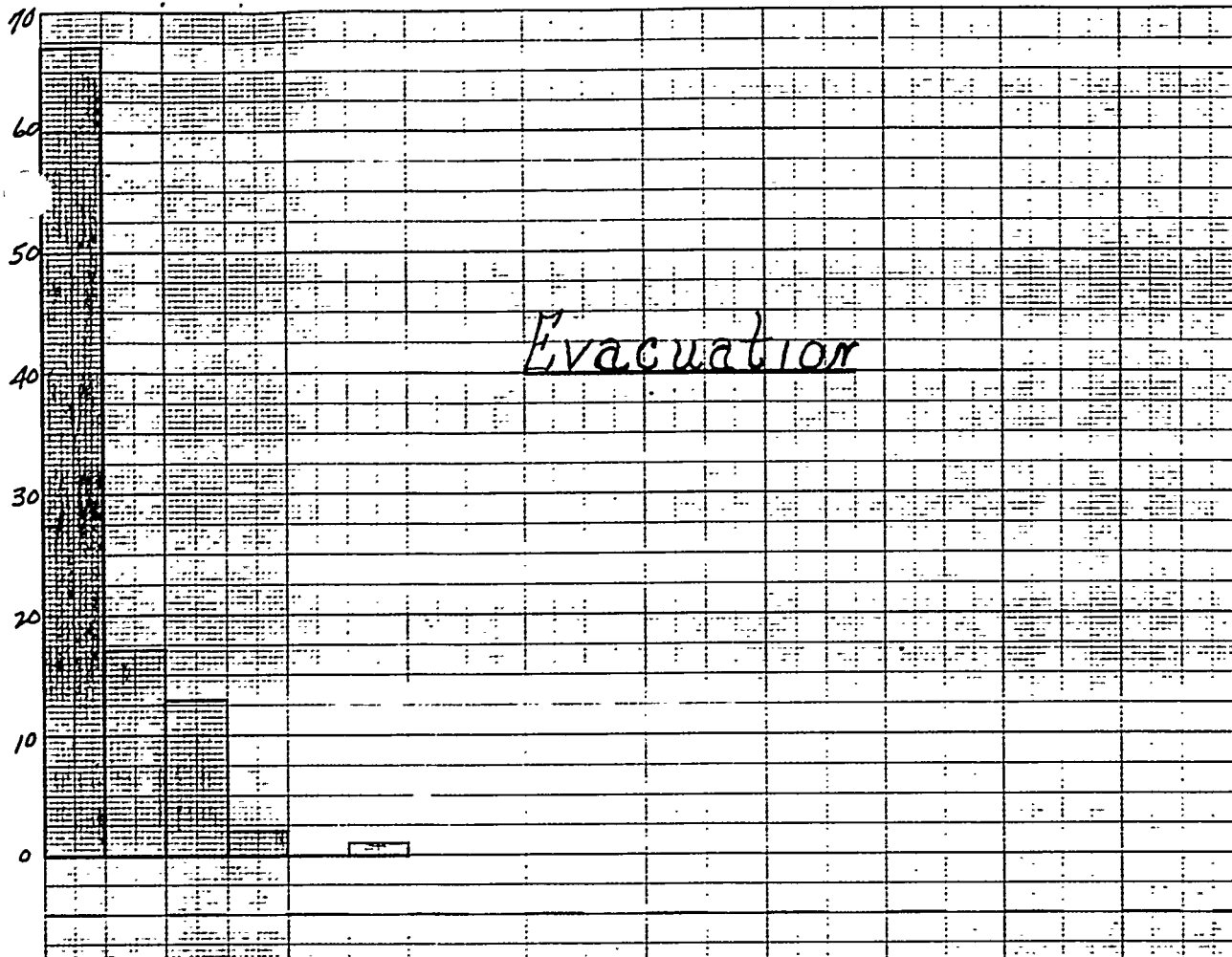
1. Removing Solvent From System
2. Flushing Solvent Lines
3. Decommissioning Solvent Lines
4. Removing Equipment From Area

17 April 54

16 Mar 54

24 Feb 54

RECORD COPY



0 .099 .149 .199 .249 .299 .349 .399 .449 .499 .549 .599 .649 .699 7.7

mg/m³

NO. 3400-20 DITIZEN GRAPH PAPER

20 X 20 PER INCH

[illegible]

Yours truly
 Fred Flint

25 Feb 1944

18 gms 6X-10

18	=	40%
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52	
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50

$$\begin{array}{r} 605 \\ \times 180 \\ \hline 4840 \\ 10900 \\ \hline 108900 \end{array}$$

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[illegible]

Page 2	
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I But I am not sitting
on the ground

I can't figure out why you can't
figure out the late system we
used

J. L.

OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>MS/Chr2-0195</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>2366000 3</u>	Date of Request <u>10/18/95</u>
Unclassified Title: <u>SOLVENT: WEEKLY REPORTS (1953)</u> <u>A-2, 9202, 9933,</u> <u>(2090-1H-4)</u> <u>9m- Acc.</u>			

Author(s) Requestor: Steve WileyTYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____☐ Journal Article (Identify Journal): _____☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
Document will be distributed at meeting ☒ No ☐ Yes
Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
Document has been previously released ☒ No ☐ Yes (Reference) _____

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)

Title(s): U Abstract: -DOCUMENT: Level U Category -Baugh 10/18/95
Signature Date

DOCUMENT REQUEST APPROVED (Division or Department)

[Signature] 10/18/95
Signature Date

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TIO File	<u>L.L. McCauley</u>		
	<u>S.W. Wiley</u>		
	<u>R.M. Keyser</u>		

Distribution Remarks: Unlimited (Chem Risk)

APPROVAL AND RELEASE

Date Received _____ Date Initiated 10/18/95
☒ CLASSIFICATIONS:
Title(s): U Abstract NA
DOCUMENT:
Level U Category -
Weapons Data - Sigma -
[Signature] 10/19/95
Y-12 Classification Office Date

☐ Editor _____ Date _____
☒ Patent Office Wiley _____ Date _____
☐ _____ Date _____
☐ _____ Date _____

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Technical Information Office Date

Conditions/Remarks:

1953
1954

Weekly Mercury Air Analysis Report

Date January 6, 1953

The following air samples were taken during the week ending January 4, 1953 to determine the level of Mercury Contamination in the various areas listed below.

Location	Total # Samples	Lowest Conc. mg/M ³	Highest Conc. mg/M ³	Avg. Conc. mg/M ³	No. Samples over the MPI
<u>Building 9201-2</u>					
C. T. F. tray room	14	.39	1.08	.86*	14
C. T. F. Farm System	13	.00	.06	.02	0
Evaporating Area	9	.03	.33	.1	4
Pilot Plant	33	.00	.25	.07	6
Column Evaporating Area	3	.04	.26	.15	2
1st Floor, Res. Lab.	27	.03	.11	.06	1
2nd Floor, Res. Lab.	20	.02	.66	.14	13
Mech. Area	24	.00	.28	.12	15

* Loading System at time of sampling, and the ventilating system was not in operation at this particular time.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section

WHB:mcb

Distribution: G. H. Clewett,
L. P. Twitchell,
L. W. Bagwell,
G. W. Mitchel,
G. A. Strasser,
J. M. Herndon,
H. M. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
C. R. Sullivan, Jr., M.D.,
J. W. Ebert,
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Edw. G. Struxness,
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SECURITY INFORMATION
Weekly Mercury Air Analysis Report

Date January 13, 1953

The following air samples were taken during the week ending January 11, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Lowest Conc. mg/M ³	Highest Conc. mg/M ³	Avg. Conc. mg/M ³	No. Samples over the MPL
Building 9201-2					
Pilot plant	55	0.00	.16	.06	9
Evaporating area	15	0.00	.12	.05	1
1st floor lab.	45	0.00	.04	.02	0
1st floor column	40	0.00	.37	.19	32*
2nd floor lab.	49	0.02	.25	.08	11
2nd floor mechanical area	55	0.00	.30	.07	18
C.T.F.	70	0.00	.42	.11	27

*No source or general ventilation. It is also suggested that more emphasis be placed on housekeeping in area mentioned above.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Sect.

WHB:MS:mcb

Distribution: G. H. Clewett,
L. P. Twichell,
L. W. Bagwell,
G. W. Mitchel,
G. A. Strasser,
J. M. Herndon,
H. M. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
C. R. Sullivan, Jr., M.D.,
J. W. Ebert,
H. T. Kite,
Edw. G. Struxness,
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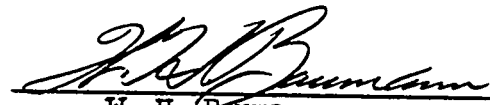
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Weekly Mercury Air Analysis Report

~~RESTRICTED~~
~~SECURITY INFORMATION~~
 Date January 19, 1953

The following air samples were taken during the week ending January 18, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Lowest Conc. mg/M ³	Highest Conc. mg/M ³	Avg. Conc. mg/M ³	No. of Samples over the MPL
<u>Building 9201-2</u>					
C.T.F. farm system	5	0.0	.04	.01	0
Pilot Plant	33	0.0	.11	.03	2
Evaporation Area	9	0.0	.03	.01	0
C.T.F. tray room	40	0.0	.45	.05	2
2nd floor lab.	21	0.0	.35	.08	2
Mechanical Area	24	0.0	.25	.07	8
1st floor lab.	18	0.0	.04	.01	0
Column in evaporation area.	7	0.02	.23	.08	2


 W. H. Baumann,
 Industrial Hygiene Section

JHB:mcb

Distribution: G. H. Clewett,
 L. P. Twitchell,
 L. W. Bagwell,
 G. W. Mitchel,
 G. A. Strasser,
 J. M. Herndon,
 H. M. McLeod, Jr.,
 J. W. Strohecker,
 W. K. Whitson,
 R. C. Kelly,
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Weekly Mercury Air Analysis Report

Date January 28, 1953

The following air samples were taken during the week ending January 25, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Lowest Conc. mg/M ³	Highest Conc. mg/M ³	Avg. Conc. mg/M ³	No. of Samp over the
<u>Building 9201-2</u>					
Pilot plant	44	0.0	.16	.03	2
Evaporation area	12	0.0	.06	.01	0
C.T.F.	53	0.0	.20	.06	8
2nd floor lab.	28	0.0	.20	.10	13
Mechanical area	32	0.0	.43	.12	16
1 floor lab.	36	0.0	.06	.03	0
Evaporation area column	12	0.0	.11	.03	1


W. H. Baumann,
Industrial Hygiene Section

WHB:mcb

Distribution: G. H. Clewett,
L. P. Twitchell,
L. W. Bagwell,
G. W. Mitchel,
G. A. Strasser,
H. M. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
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J. W. Ebert,
H. T. Kite,
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is prohibited by law."

9733-1

.18

.05

.03

.06

.07

.05

.03

.00

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.06 ± 5

avg SD

Weekly Mercury Air Analysis Report

Date February 3, 1955

The following air samples were taken during the week ending February 1, 1955 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.--mg/M ³			# Sample >MPL
		Low	High	Average	
<u>Building 9733-1</u>					
Material Chemistry Rooms 15, 17, 19 and 22	30	.00	.02	.00	0
OREM, Room 25	15	.00	.51	.18	12
<u>Building 2201-2</u>					
CTF	60	.00	.53	.05	5
ADP, 2nd. floor lab.	27	.00	.45	.12	10
ADP, 2nd, floor, mechanical and development	32	.00	.26	.11	14
Pilot Plant	56	.00	.56	.08	22
1st floor, Research lab.	36	.00	.03	.01	0
ADP, 1st floor column	12	.04	.20	.11	8
ADP, Maintenance shop.	6	.00	.03	.01	0

Note: ¹ Housekeeping very poor; considerable number of leaks in system.

² During period mentioned above the Pilot Plant was not in operation; but under repair.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section

WHB:IS:mcb

Distribution: G. H. Clewett,
L. P. Twitchell,
L. W. Bagwell,
G. W. Mitchel,
G. A. Strasser,
H. E. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
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Weekly Mercury Air Analysis Report

Date February 9, 1953

The following air samples were taken during the week ending February 8, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³			# Samples > MPL
		Low	High	Average	
<u>Building 9201-2</u>					
A.D.P., C.T.F.	65	.00	.22	.06	15
A.D.P., Pilot Plant.	56	.00	.15	.04	6
A.D.P., 2nd floor lab.	35	.00	.39	.10	17
A.D.P., mechanical area.	39	.00	.45	.07	9
A.D.P., 1st floor lab.	36	.00	.03	.01	0
A.D.P., evaporation area column	16	.00	.16	.05	3
<u>Building 9733-1</u>					
O.R.E.X.	60	.00	.22	.05	7

*Special emphasis should be placed on housekeeping


W. H. Baumann,
Industrial Hygiene Section

WHB:MS:mcb

Distribution: G. H. Clewett,
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G. W. Mitchel,
G. A. Strasser,
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J. W. Strohecker,
W. K. Whitson,
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Weekly Mercury Air Analysis Report

Date February 16, 1953

The following air samples were taken during the week ending February 15, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³			# Samples MPL
		Low	High	Average	
Building 9995					
Spec. Lab. #2, A.D.P.	14	.00	.04	.00	0
Building 9201-2					
Pilot Plant, A.D.P.	44	.00	.12	.04	1
Evaporation Area, A.D.P.	12	.00	.08	.03	0
2nd Floor Lab., A.D.P.	28	.00	.12	.06	4
Mechanical Area, A.D.P.	32	.00	.15	.04	3
1st Floor Lab., A.D.P.	36	.00	.11	.02	1
Column Area, A.D.P.	15	.00	.11	.03	1
C. T. F. System, A.D.P.	52	.00	.22	.04	5
Building 9733-1					
Room #25	30	.00	.09	.03	0


W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:MS:mcb

Distribution: G. H. Clewett,
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G. A. Strasser,
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J. W. Strohecker,
W. K. Whitson,
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C. R. Sullivan, Jr., M.D.,
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H. T. Kite,
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Weekly Mercury Air Analysis Report

Date February 24, 1953

The following air samples were taken during the week ending February 22, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³		Avg.	# Samples > MPL
		Low	High		
<u>Building 2201-2, A.D.P.</u>					
C. T. F.	53	.00	.08	.02	0
Pilot Plant	66	.00	.22	.07	20
1st Floor Lab.	59	.00	.12	.03	1
Column Area	24	.00	.45	.10	7
2nd Floor Lab.	35	.00	.26	.08	8
Mechanical Area	50	.00	.16	.04	6
<u>Building 9733-1</u>					
O.R.E.X., Rm. #25	60	.00	.26	.06	6
Chem. Div., Misc. Sampling	18	.00	.01	.00	0

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WAB:LS:rob

Distribution: G. H. Clewett,
L. P. Twitchell,
L. W. Baywell,
G. W. Mitchel,
G. A. Strasser,
H. M. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
C. R. Sullivan, Jr., M.D.,
J. W. Ebert,
H. T. Kite,
E. G. Struxness, YL2RC
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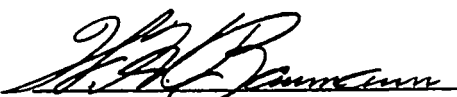
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Weekly Mercury Air Analysis Report

Date March 5, 1953

The following air samples were taken during the week ending March 1, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9733-1</u>					
OREX, Rm. #25.	63	.00	.40	.07	11
<u>Building 9201-2, ADP</u>					
Pilot Plant	44	.00	.15	.04	4
Evaporation Area	12	.00	.16	.05	2
CTF	52	.00	.15	.04	2
Research Lab., 1st floor	36	.00	.06	<.01	0
Column Area	16	.03	.23	.11	7
2nd. floor lab.	28	.00	.16	.08	10
Mechanical area	33	.00	.25	.08	12


W. H. Baumann,
Industrial Hygiene Sect
Health Physics Department

WHB:MS:mcb

Distribution: G. H. Clewett,
L. P. Twitchell,
L. W. Bagwell,
G. W. Mitchel,
G. A. Strasser,
H. M. McLeod, Jr.,
J. W. Strohecker,
W. K. Whitson,
R. C. Kelly,
C. R. Sullivan, Jr., M.D.,
J. W. Ebert,
H. T. Kite,
E. G. Struxness, Y12RC
File

Weekly Mercury Air Analysis Report

Date March 9, 1953

The following air samples were taken during the week ending March 8, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
C.T.F.	65	.00	.75	.08	20
Pilot Plant	55	.00	.22	.06	14
Evaporation Area	15	.00	.08	.03	0
2nd Floor Lab.	35	.04	.18	.09	12
Mechanical Area	41	.00	.33	.10	17
1st Floor Lab.	45	.00	.10	.04	0
1st Floor Column Area	20	.00	.11	.04	1
Maint. Area	15	.00	.2	.03	1
<u>Building 9733-1</u>					
OREX	74	.00	.24	.05	6
<u>Building 9995</u>					
ADP	9	.00	.08	.01	0

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:mcb

Distribution: G. H. Clewett
L. P. Twitchell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson
R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
E. G. Struxness, Y12RC
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Weekly Mercury Air Analysis Report

Date March 16, 1953

The following air samples were taken during the week ending March 15, 1953 to determine the level of mercury contamination in the various areas listed below.

Location	Total # Samples	Hg.-Air Conc.-mg/M ³			# Samples MPL
		Low	High	Avg.	
<u>Building 9733-1</u> Room #25	57	.00	.13	.03	1
<u>Building 9201-2</u> 2nd Floor Lab.	28	.00	.25	.10	18 ¹
2nd Floor Mech.	30	.00	.30	.08	8
Evaporation Area	9	.00	.10	.04	0
Pilot Plant	33	.00	.45	.12	11 ²
C.T.F.	39	.00	.25	.10	17 ³
1st Floor Lab.	36	.00	.04	.02	0
Column Area	16	.04	.37	.15	8 ⁴
C.T.F., Maint. Area	16	.00	.49	.10	4

Note- ¹Column under repair during sampling period. Special emphasis should be placed on housekeeping.

²High concentration around absorber section.

³High concentration during repair of trays.

⁴Column under repair during period of sampling.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:MS:mcb

Distribution: 1. G. H. Clewett 8. W. K. Whitson
2. L. P. Twitchell 9. R. C. Kelly
3. L. W. Bagwell 10. C. R. Sullivan, Jr., M.D.
4. G. W. Mitchel 11. J. W. Ebert
5. G. A. Strasser 12. H. T. Kite
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Weekly Solvent Air Analysis Report

Date March 24, 1953

The following air samples were taken during the week ending March 22, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples < MPL
		Low	High	Avg.	
<u>Building 9201-2, ADP</u>					
C.T.F.	65	.00	.39	.08	23*
2nd Floor Lab.	35	.03	.35	.16	23**
2nd Floor Mechanical and Development	41	.00	.57	.13	15**
Pilot Plant	55	.00	.18	.05	12
Evaporation Area	15	.00	.21	.07	4
1st Floor Research Lab.	45	.00	.12	.02	1
Column Area	20	.03	.33	.13	10**
C.T.F., Maintenance Area	15	.03	.20	.07	4
<u>Building 9733-1</u>					
C.R.E.X., Rm. #25	15	.00	.00	.00	0
Material Chem. Laboratories	25	.00	.01	.00	0

* Highest reading were obtained while maintenance men were working on system.

** Special emphasis should be placed on housekeeping and use of ventilation.

W. H. Baumann

W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHE:PS:mcg

Distribution: 1. G. H. Clewett 9. R. C. Kelly
2. L. P. Twitchell 10. C. R. Sullivan, Jr., M.D.
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4. G. W. Mitchel 12. H. T. Kite
5. G. A. Strasser 13. Joe Williams
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Date April 7, 1953

The following air samples were taken during the week ending March 27, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2, ADP Pilot Plant	55	0.0	.47	.11	23*
Evaporation Area	15	0.0	.10	.04	0
2nd Floor Research Lab.	35	.06	.23	.14	28**
2nd Floor Mechanical and Development	35	0.0	.26	.08	10
1st Floor Research Lab.	45	0.0	.03	.01	0
Column Area	20	0.0	.12	.04	2
C.T.F.	65	0.0	.18	.05	14
Building 9723-3 Change House	9	0.0	.08	.02	0

* Pilot Plant under repair during sampling.

** Special emphasis should be placed on housekeeping and more effective use of source ventilation.


W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:MS:cs

Distribution: 1. G. H. Clewett
2. L. P. Twitchell
3. L. W. Bagwell
4. G. W. Mitchel
5. G. A. Strasser
6. H. M. McLeod, Jr.
7. J. W. Strohecker
8. W. K. Whitson
9. R. C. Kelly
10. C. R. Sullivan, Jr., M.D.
11. J. W. Ebert
12. H. T. Kite
13. Joe Williams
14. E. G. Struxness, Y12RC
15. File —

Date April 7, 1953

The following air samples were taken during the week ending April 4, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
Building 9201-2, ADP C.T.F.	78	0.0	.22	.05	10
Pilot Plant	66	0.0	.25	.10	29*
Evaporation Area	18	0.0	.25	.08	5
1st Floor Lab.	54	0.0	.06	.02	0
Research - Column	24	0.0	.26	.04	2
2nd Floor Research Lab.	42	0.0	.18	.06	9
2nd Floor Research Mechanical Area	42	0.0	.20	.06	7
C.T.F. Maintenance Area	15	0.0	.16	.05	2

Note: Pilot Plant has been under repair during sampling period.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:MS:cs

Distribution: 1. G. H. Clewett 9. R. C. Kelly
2. L. P. Twitchell 10. C. R. Sullivan, Jr., M.D.
3. L. W. Bagwell 11. J. W. Ebert
4. G. W. Mitchel 12. H. T. Kite
5. G. A. Strasser 13. Joe Williams
6. H. M. McLeod, Jr. 14. E. G. Struxness, Y12RC
7. J. W. Strohecker 15. File
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Date April 14, 1953

The following air samples were taken during the period covering April 6 through April 10, 1953 to determine the level of solvent contamination in the various areas listed below.

LOCATION	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2, ADP C.T.F.	65	.00	.30	.05	6
2nd Floor Lab.	35	.00	.20	.08	7
Mechanical Area 2nd Floor	35	.00	.16	.07	9
1st Floor Lab.	45	.00	.08	.03	0
Pilot Plant	55	.00	.28	.10	25*
Evaporation Area	15	.00	.15	.04	1
Column Area	8	.00	.04	.02	0

* Pump leaking and spraying solvent on April 6th. Cleaning caustic from air ducts on April 10th.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:cs

Distribution: 1. G. H. Clewett 10. R. C. Kelly
2. L. P. Twitchell 11. C. R. Sullivan, Jr., M.D.
3. L. W. Bagwell 12. J. W. Ebert
4. G. W. Mitchell 13. H. T. Kite
5. H. M. McLeod, Jr. 14. Joe Williams
6. G. A. Strasser 15. E. G. Struxness, Y12RC
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8. W. K. Whitson 17. File ✓
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Weekly Solvent Report

Date April 21, 1953

The following air samples were taken in Building 9201-2 during the period covering April 13, through April 18, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Ave.	
Building 9201-2, ADP C.T.F.	78	0.0	.45	.12	38**
Pilot Plant	66	0.0	.28	.11	33**
Evaporation Area	18	0.0	.11	.04	
C.T.F. Maintenance Area	14	.03	.08	.05	0
1st floor lab.	54	0.0	.06	.02	0
Mech. Area	46	0.6	.61	.13	20*
Colex	51	0.0	.32	.04	6
2. floor lab.	39	.06	.28	.16	31**

* Some old equipment being cleaned and removed from area.

** Highest readings were obtained on days that all available air supply and exhaust fans were not in use.

W. H. Baumann

W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:ms

Distribution :

1. G. H. Clewett	9. R. C. Kelly
2. L. P. Twitchell	10. C. R. Sullivan, Jr., M.D.
3. L. W. Bagwell	11. J. W. Ebert
4. G. W. Mitchel	12. H. T. Kite
5. G. A. Strasser	13. Joe Williams
6. H. M. McLeod, Jr.	14. E. G. Struxness, Y-12RC
7. J. W. Strohecker	15. File
8. W. K. Whitson	

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Weekly Solvent Air Analysis Report

Date April 29, 1953

The following air samples were taken during the week ending April 26, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
C.T.F.	65	.00	.25	.07	16
A.D.P., 2nd Floor Research Lab.	33	.02	.15	.08	11
A.D.P., Research, 2nd Floor Mechanical Area	40	.00	.53	.12	17*
A.D.P., Evaporating Area	6	.00	.06	.03	00
A.D.P., Pilot Plant	55	.00	.25	.08	20
A.D.P., Research, 1st. Floor Lab.	18	.00	.02	<.01	00
A.D.P.-C.T.F., Maint. Area.	15	.00	.08	.03	00
A.D.P., Colex	25	.00	.06	<.01	00
<u>Buildings 9733-1 and 9733-2</u>					
Chemical Division	20	.00	.03	<.01	00
<u>Building 9202</u>					
O.R.E.X.	12	.00	.03	<.01	00

* This area's average concentration would have been < .1 mg/M³ of air except for one high sample taken over agitator, west end of the area.

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section,
Health Physics Department

WHB:MS:mcB


Distribution: 1. G. H. Clewett 9. R. C. Kelly
2. L. P. Twitchell 10. C. R. Sullivan, Jr., M.D.
3. L. W. Bagwell 11. J. W. Ebert
4. G. W. Mitchel 12. H. T. Kite
5. G. A. Strasser 13. Joe Williams
6. H. M. McLeod, Jr. 14. E. G. Struxness, Y12RC
7. J. W. Strohecker 15. File
8. W. K. Whitson

Weekly Solvent Air Analysis Report

Date May 7, 1953

The following air samples were taken during the week ending May 3, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2, ADP C.T.F.	78	.00	.43	.12	40
Pilot Plant	66	.00	.25	.10	39
Research lab, 2nd floor	36	.00	.25	.10	14
2nd floor, mechanical area	53	.00	.30	.09	17
Evaporating area	6	.00	.08	.03	0
Colex	41	.00	.18	.03	2
Maint. area, C.T.F.	15	.00	.10	.04	0
1st floor research lab.	9	.00	.04	.03	0
Feed purification area	6	.00	.22	.06	2
<u>OREX</u>	12	.00	.00	.00	0


W. H. Baumann,
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WHB:MS:mcb

Distribution: G. H. Clewett R. C. Kelly
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G. W. Mitchel H. T. Kite
G. A. Strasser Joe Williams
H. M. McLeod, Jr. E. G. Struxness, Y12RC
J. W. Strohecker File ✓
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WEEKLY SOLVENT AIR ANALYSIS REPORT

Date May 14, 1953

The following air samples were taken during the week ending May 10, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples MPL
		Low	High	Avg.	
<u>Building 9201-2, ADP</u> 2nd Floor Lab.	30	.00	.22	.09	12
Colex	31	.00	.08	.02	0
Pilot Plant	55	.00	.22	.19	30
2nd Floor, Mechanical Area	46	.00	.37	.14	25
C.T.F.	65	.00	.37	.15	31
C.T.F., Maint. Area	15	.00	.08	.04	0
<u>Building 9202</u> REX	80	.00	.64	.11	28
<u>Building 9728</u> Laundry-OREX Clothes	8	.00	.08	.04	3

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Distribution: G. H. Clewett
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W. K. Whitson
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C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
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Weekly Solvent Air Analysis Report

Date May 19, 1953

The following air samples were taken during the week ending May 17, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2, ADP 2nd Floor Lab.	30	.04	.22	.12	15
Mech. Area	46	.00	.45	.15	27
C.T.F.	65	.00	.41	.07	15
Pilot Plant	55	.00	.20	.08	17
Evaporation Area	3	.03	.08	.06	0
Feed Purification Area	5	.06	.16	.1	3
C.T.F., Maint. Area	16	.00	.00	.00	0
Colex	15	.00	.04	.02	0
Building 9202 CREX	23	.02	.1	.05	0

W. H. Baumann
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Industrial Hygiene Section
Health Physics Department

MS:GA:mcb

Distribution: G. H. Clewett
L. P. Twitchell
L. W. Bagwell
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G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson
R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, YL2RC
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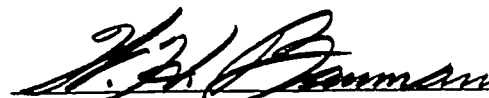
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is prohibited by law.

Weekly Solvent Report

Date May 27, 1953

The following air samples were taken during the week ending May 24, 1953 to determine the level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/m ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
C.T.F.	26	.00	.38	.11	8
Pilot Plant	22	.03	.18	.1	9
2nd Floor Lab.	12	.06	.22	.13	8
Mech. Area	20	.00	.33	.12	10
C.T.F. Maint. Area	13	.02	.1	.04	0
<u>Building 9202</u>					
CREX	12	.00	.04	.01	0


W. H. Baumann,
Industrial Hygiene Sect
Health Physics Departme

E:GA:mcb


Distribution: G. H. Clewett
L. P. Twitchell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson
R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Strumess, Y12RC
File ~~XXXX~~

Weekly Solvent Report


Date June 1, 1953

The following air samples were taken during the week ending May 31, 1953 to determine level of solvent contamination in the various areas listed below.

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Ex	14	.00	.02	.01	0
P.F. Maint. Area	13	.00	.04	.01	0
1 Floor lab.	12	.11	.25	.15	12
ch. Area	20	.04	.53	.23	18
lot Plant	22	.00	.10	.05	0
T.F.	39	.00	.33	.07	7
<u>Building 9202</u>					
st Floor	6	.06	.20	.13	3
st Area	6	.02	.06	.03	0


W. R. Baumann,
Industrial Hygiene Section
Health Physics Department

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Distribution: G. H. Clewett
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L. W. Bagwell
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G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson
R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, Y12RC
File 

Weekly Solvent Report


Date June 10, 1953

The following air samples were taken during the week ending June 7, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Lab., 2nd. Floor	18	.04	.26	.15	13
Dev. & Mech. Area	30	.00	.45	.17	19
Colex	14	.00	.01	<.01	00
C.T.F.	26	.00	.20	.05	03
Pilot Plant	22	.00	.18	.07	04
<u>Building 9995</u>					
..D.P.	19	.00	.08	.02	00


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

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Distribution: G. H. Clewett
L. P. Twitchell
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H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson
R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, Y12RC
File 

Weekly Solvent Report

Date June 15, 1953

The following air samples were taken during the week ending June 14, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Pilot Plant	66	.00	0.16	.05	8
C.T.F.	78	.00	0.39	.09	16
2nd. Floor Lab.	36	.04	0.43	.23	33
Mech. Area	60	.00	1.01	.33	50
1st Floor Lab.	7	.00	0.08	.03	0
C.T.F., Maint.	13	.00	0.06	.02	0
Colex	14	.00	0.16	.06	3
<u>Building 9202</u>					
1st Floor	30	.00	0.40	.15	16
Mech. Area	30	.01	0.83	.3	23
2nd. Floor	40	.03	0.30	.14	29
3rd. Floor	22	.01	0.26	.07	6


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

MS:GA:mcb

Distribution: 1. G. H. Clewett
2. L. P. Twitchell
3. L. W. Bagwell
4. G. W. Mitchel
5. G. A. Strasser
6. H. M. McLeod, Jr.
7. J. W. Strohecker
8. W. K. Whitson
9. R. C. Kelly
10. C. R. Sullivan, Jr., M.D.
11. J. W. Ebert
12. H. T. Kite
13. Joe Williams
14. E. G. Struxness, Y12RC
15. File

INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION Post Office Box P
OAK RIDGE, TENN.

TO G. H. Clewett
LOCATION 9733-1

DATE June 22, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO

L. P. Twitchell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson

R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending June 19, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Pilot Plant	55	.00	0.32	.08	16
C.T.F.	65	.00	0.39	.11	24
2nd. Floor Lab.	30	.00	0.37	.14	14
Mech. Area	50	.02	1.01	.34	41
Colex	14	.00	0.12	.04	1
C.T.F., Maint.	13	.00	0.03	<.01	0
<u>Building 9202</u>					
1st Floor	24	.01	0.22	.10	9
Mez. Area	24	.07	0.60	.21	22
2nd Floor	40	.00	0.30	.07	11
3rd Floor	20	.00	0.16	.08	7
Penthouse	5	.18	0.36	.25	5
<u>Building 9733-1 & 2</u>					
Rms. 12, 15, 17 & 19	28	.00	0.02	<.01	0
<u>Building 9728</u>	9	.00	0.03	<.01	0

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

MS:GA:mc

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO G. H. Clewett
LOCATION 9733-1

DATE June 29, 1953

ANSWERING LETTER DATE


ATTENTION

COPY TO L. P. Twitchell R. C. Kelly SUBJECT Weekly Solvent Report
L. W. Bagwell C. R. Sullivan, Jr., M.D.
G. W. Mitchel J. W. Ebert
G. A. Strasser H. T. Kite
H. M. McLeod, Jr. Joe Williams
J. W. Strohecker E. G. Struxness, Y12RC
W. K. Whitson File ~~_____~~

28

The following air samples were taken during the week ending June 22, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Pilot Plant	44	0.0	.32	.09	16
C.T.F.	52	0.0	.32	.10	26
2nd. Floor Lab.	30	0.0	.45	.13	12
Mech. Area	49	0.0	1.7 ⁺	.6	45
Colex	14	0.0	.25	.07	2
<u>Building 9202</u>					
1st. Floor	18	.02	.44	.17	9
Mez. Area	18	0.0	.71	.16	9
Penthouse	4	.07	.12	.1	2
2nd. Floor	30	0.0	.28	.06	5
3rd. Floor	18	0.0	.2	.06	5


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

MS:GA:cs

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

List

DATE **March 8, 1956**

ATTENTION
COPY TO

J. P. Murray

G. A. Strasser

W. K. Whitson

H. C. McBirney

G. W. Evans

F. V. Tilson

D. A. Jennings

Neal Dow, Jr.

W. C. Moore

H. T. Kite

R. A. Walker

J. C. Little

J. W. Strohecker

L. C. Emerson

J. W. Ebert

W. E. Heckart

C. B. Newman

D. G. Mill

D. H. Rader

G. W. Flack

L. W. Bagwell

File (X-18 RC) ✓

ANSWERING LETTER DATE

SUBJECT **Solvent Air Analysis for
Alley Division, February 1956**

RESTRICTED DATA

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THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

The following tables give the average concentrations of Solvent Vapor in air for the various Alley Division operations for the month of February. Averages for January are included for comparison.

Building 9204-4

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	1633	1463
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	25	14

The sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	75	56
0.10 - 0.19	20	12
0.20 - 0.29	3.5	2
0.30 - 0.39	1.0	< 0.1
0.40 - 0.60	0.5	< 0.1

<u>Area</u>	<u>Average Concentration (mg/m³)</u>	
	<u>Jan.</u>	<u>Feb.</u>
Bonnet Repair	0.10	0.05
Bonnet Storage	0.12	0.08
Chemical Recovery	0.12	0.09
Demineralizer	0.12	0.08
Flow Control	0.08	0.03
Blender Stations	0.08	0.06
Blender Stations (North)	0.04	0.03
Blender Stations (South)	0.04	0.02
Feed Prep	0.06	0.05
Solvent Purification	0.11	0.09

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<u>Areas</u>	<u>Average Concentration (mg/m³)</u>	
	<u>Jan.</u>	<u>Feb.</u>
Cascades (North)	0.03	-
Cascades (South)	0.03	-
Lunch Room	0.07	0.02
Welding Shop	-	0.07
Degreaser Area	-	0.08

Building 9201-2

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	1092	985
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	36.5	45

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	63.5	55
0.10 - 0.19	35	37.8
0.20 - 0.29	3	5.0
0.30 - 0.39	0.5	1.6
0.40 - 0.60	0	0.9

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>	
	<u>Jan.</u>	<u>Feb.</u>
MCTP	0.11	0.11
PTP	0.11	0.11
Colex Tray #1	0.12	0.11
Colex Tray #2	0.08	0.18
Colex Tray #3	0.08	0.13
Mechanical Shop	0.05	0.07
At Water Fountain 2nd. Floor	0.03	0.06

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<u>Area</u>	<u>Average Concentration (mg/m³)</u>	
	<u>Jan.</u>	<u>Feb.</u>
Machine Shop X-10	0.04	0.03
Lunch Room	0.03	0.06
Electrical Shop	0.06	-
Instrument Shop	0.04	-
New Tray Area	-	0.12

Building 0201-5

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	5856	13,308
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	69	49.7

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	31	50.3
0.10 - 0.19	45.6	39.3
0.20 - 0.29	16	3.1
0.30 - 0.39	3	1.6
0.40 - 0.49	1.4	0.6
0.50 - 0.59	1	0.3
0.60 - 0.69		
0.70 - 0.79		
0.80 - 0.89		
0.90 - 0.99		
> 1.00		

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There has been a further decrease in the percentage of samples above the MAC. It is quite significant that only 10% of the samples were greater than 0.20 mg/m³. The average concentration for the building as determined by using all samples is 0.10 mg/m³ for February. This average was 0.13 mg/m³ for January.

The average concentrations for the various areas in mg/m³ is as follows:

<u>Area</u>	<u>Concentration (mg/m³)</u>	
	<u>January</u>	<u>February</u>
Cascade #1 1st. Level	0.19	0.13
2nd. Level	0.29	0.15
3rd. Level	0.22	0.18
4th. Level	0.13	0.08
Cascade #2 1st. Level	0.18	0.11
2nd. Level	0.20	0.16
3rd. Level	0.17	0.14
4th. Level	0.10	0.08
Cascade #3 1st. Level	0.13	0.11
2nd. Level	0.19	0.12
3rd. Level	0.18	0.11
4th. Level	0.14	0.07
Cascade #4 1st. Level	0.08	0.08
2nd. Level	0.15	0.11
3rd. Level	0.14	0.13
4th. Level	0.12	0.08
Cascade #5 1st. Level	0.13	0.08
2nd. Level	0.07	0.05
3rd. Level	0.12	0.10
4th. Level	0.08	0.05
Cascade #6 1st. Level	0.18	0.13
2nd. Level	0.09	0.07
3rd. Level	0.15	0.13
4th. Level	0.09	0.07
Absorber #1	0.10	0.11
Absorber #1A	0.19	0.13
Absorber #2	0.11	0.10
Absorber #3	0.17	0.13
Absorber #4	0.12	0.11
Absorber #5	0.07	0.10
Absorber #6	0.08	0.12
Injection Pump Area 1 and 2	0.22	0.14
Injection Pump Area 3 and 4	0.21	0.13
Injection Pump Area 5 and 6	0.18	0.12

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<u>Areas</u>	<u>Concentration (mg/m³)</u>	
	<u>January</u>	<u>February</u>
Purified Feed Storage	0.24	0.12
1st. Stage Feed Prep	0.09	0.09
Instrument Shop	0.17	0.07
Buffalo Pump Repair	0.14	0.11
Chemical Recovery	0.09	0.09
Evaporator Room	0.25	0.09
Feed Mixing Area	0.21	0.14
Extractors	0.06	0.10
Maintenance Shops	0.17	0.09
Lunch Room	0.22	0.12
Office Areas	0.12	0.08
Central Control Room	0.10	0.06

Building 9201-4

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	7224	3492
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	72.5	41

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	27.5	59
0.10 - 0.19	45	34
0.20 - 0.29	14	4.6
0.30 - 0.39	6	1.6
0.40 - 0.49	4	0.5
0.50 - 0.59	1.6	0.35
0.60 - 0.69	0.7	
0.70 - 0.79	0.3	
0.80 - 0.89	0.4	
0.90 - 0.99	0.2	
> 1.00	0.3	

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The most significant feature of the above distribution pattern is that only 7% of the samples were greater than 0.20 mg/m^3 . The fact that only 4% of the samples exceeded the MLC is further indication of a decrease in the air concentrations.

The building average for February is 0.10 mg/m^3 as compared with 0.16 mg/m^3 for January.

The average concentrations in mg/m^3 for various areas is as follows:

Areas	Concentration (mg/m^3)	
	January	February
Cascade #7 1st. Level	0.08	0.05
2nd. Level	0.17	0.08
3rd. Level	0.12	0.07
4th. Level	0.11	0.07
Cascade #8 1st. Level	0.09	0.08
2nd. Level	0.17	0.11
3rd. Level	0.17	0.09
4th. Level	0.17	0.08
Cascade #9 1st. Level	0.10	0.06
2nd. Level	0.19	0.11
3rd. Level	0.14	0.07
4th. Level	0.14	0.07
Cascade #10 1st. Level	0.12	0.07
2nd. Level	0.25	0.09
3rd. Level	0.20	0.08
4th. Level	0.19	0.06
Absorber #7	0.13	0.10
Absorber #8	0.24	0.16
Absorber #9	0.32	0.11
Absorber #10	0.14	0.10
Injection Pump Area #7	0.14	0.10
Injection Pump Area #8	0.23	0.11
Injection Pump Area #9	0.18	0.15
Injection Pump Area #10	0.20	0.12
Hanging Gardens #7	0.20	0.13
Hanging Gardens #8	0.22	0.13
Hanging Gardens #9	0.26	0.16
Hanging Gardens #10	0.28	0.14
Evaporator	0.10	0.08
Feed Prep and Extract 1st. Level	0.06	0.09
Feed Prep and Tray Area 2nd. Level	0.23	0.12
Feed Prep and Column Area 1st. Level	0.08	0.06
Feed Prep and Column Area 2nd. Level	0.16	0.12
Feed Prep and Column Area 3rd. Level	0.14	0.06

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<u>Areas</u>	<u>Concentration (mg/m³)</u>	
	<u>January</u>	<u>February</u>
Maintenance Shop	0.17	0.18
Central Control Room	0.18	0.11
Office Areas	0.06	0.09
Lunch Room	0.09	0.13
Electrical & Instrument Shop		0.13

Source Samples

Sampling to determine high sources of solvent vapor is still being carried on in both 9201-6 and 9201-4.

Other Sampling

Samples have been taken in the General Machine Shops in Bldg. 9201-1 to determine if a solvent vapor hazard existed during machining of contaminated parts.

These samples and others taken in the past indicate that no appreciable amounts of solvent vapor are present during these operations.

Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:cm

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

List

DATE April 11, 1956

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray

SUBJECT Solvent Air Analysis for
Alloy Division, March 1956

G. A. Strasser

W. K. Whitson

H. C. McBirney

G. W. Evans

Neal Dow, Jr.

D. A. Jennings

W. C. Moore

H. T. Kite

R. A. Walker

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The following tables give the average concentrations of Solvent vapor in air for the various Alloy Division operations for the month of March. Averages for January and February are included for comparison.

Building 9204-4

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	1633	1463	2024
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	25	14	23

The sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	75	86	77
0.10 - 0.19	20	12	18.4
0.20 - 0.29	3.5	2	4.1
0.30 - 0.39	1.0	<0.1	0.4
0.40 - 0.60	0.5	<0.1	0.1

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Bonnet Repair	0.10	0.05	0.04
Bonnet Storage	0.12	0.06	0.09
Chemical Recovery	0.12	0.09	0.13
Demineralizer	0.12	0.08	0.07
Flow Control	0.08	0.03	0.04
Blender Stations	0.04	0.03	0.07
Blender Stations (North)	0.04	0.03	0.05
Blender Stations (South)	0.04	0.02	0.04
Feed Prep	0.06	0.05	0.11
Solvent Purification	0.11	0.09	0.09
Cascades (North)	0.03	-	0.03
Cascades (South)	0.03	-	0.05

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<u>Areas</u>	<u>Average Concentrations (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Lunch Room	0.07	0.02	0.05
Welding Shop	-	0.07	-
Degreaser Area	-	0.08	-

Some areas in 9204-4 are rising in concentration due to shut-down operations?

Building 9201-2

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	1092	985	1129
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	36.5	45	26.5

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	63.5	55	73.5
0.10 - 0.19	33	37.5	24.6
0.20 - 0.29	3	5.0	1.3
0.30 - 0.39	0.5	1.6	0.1
0.40 - 0.60	0	0.9	0.4

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
MCTF	0.11	0.11	0.09
PTF	0.11	0.11	0.08
Colex Tray #1	0.12	0.11	0.06
Colex Tray #2	0.08	0.18	0.08
Colex Tray #3	0.06	0.13	0.12
Mechanical Shop	0.05	0.07	0.08
At Water Fountain 2nd. Floor	0.03	0.06	0.04

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<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Machine Shop X-10	0.04	0.03	0.04
Lunch Room	0.03	0.06	0.07
Electrical Shop	0.06	-	-
Instrument Shop	0.04	-	-
New Tray Area	-	0.12	0.04

Building 9201-5

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	9356	13,605	15,026
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	69	49.7	22.5

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	31	50.3	77.5
0.10 - 0.19	45.6	39.3	19.0
0.20 - 0.29	16	8.1	2.4
0.30 - 0.39	5	1.5	0.5
0.40 - 0.49	1.4	0.5	0.2
0.50 - 0.69	1.0	0.3	0.3
0.70 - 0.79			
0.80 - 0.89			
0.90 - 0.99			
> 1.00			

The percentage of samples above the MAC has been decreased to 22.5. Only 3.5% of the samples were above 0.20 mg/m³. The building average as determined from all samples for the past three months is as follows: Jan. 0.15 mg/m³, Feb. 0.10 mg/m³ and March 0.08 mg/m³. Although this average is below the MAC it should be remembered that there are still specific operations where the air concentrations are above the MAC. However the data presented above indicates that much has been accomplished during the past quarter towards lowering the solvent vapor concentrations.

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The average concentrations for the various areas in mg/m^3 is as follows:

<u>Areas</u>		<u>Concentration (mg/m³)</u>		
		<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Cascade #1	1st. Level	0.19	0.13	0.08
	2nd. Level	0.29	0.15	0.11
	3rd. Level	0.22	0.16	0.08
	4th. Level	0.13	0.08	0.05
Cascade #2	1st. Level	0.16	0.11	0.05
	2nd. Level	0.20	0.15	0.07
	3rd. Level	0.17	0.14	0.06
	4th. Level	0.10	0.08	0.04
Cascade #3	1st. Level	0.13	0.11	0.06
	2nd. Level	0.19	0.12	0.07
	3rd. Level	0.18	0.11	0.06
	4th. Level	0.14	0.07	0.04
Cascade #4	1st. Level	0.08	0.08	0.05
	2nd. Level	0.15	0.11	0.06
	3rd. Level	0.14	0.13	0.06
	4th. Level	0.12	0.08	0.04
Cascade #5	1st. Level	0.13	0.08	0.05
	2nd. Level	0.07	0.05	0.04
	3rd. Level	0.12	0.10	0.06
	4th. Level	0.08	0.05	0.04
Cascade #6	1st. Level	0.18	0.13	0.08
	2nd. Level	0.09	0.07	0.05
	3rd. Level	0.15	0.13	0.07
	4th. Level	0.09	0.07	0.04
Absorbers	#1	0.10	0.11	0.11
	1A	0.19	0.13	0.22
	2	0.11	0.10	0.08
	3	0.17	0.13	0.10
	4	0.12	0.11	0.12
	5	0.07	0.10	0.11
	6	0.08	0.12	0.10
Pump Area 1 and 2		0.22	0.14	0.10
Pump Area 3 and 4		0.21	0.13	0.08
Pump Area 5 and 6		0.18	0.12	0.07
Purified Feed Storage		0.24	0.12	0.08
1st. Stage Feed Prep		0.09	0.09	0.09
Instrument Shop		0.17	0.07	0.06
Buffalo Pump Repair		0.14	0.11	0.06
Chemical Recovery		0.09	0.09	0.06
Evaporator Room		0.25	0.09	0.06
Feed Mixing Area		0.21	0.14	0.08

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<u>Areas</u>	<u>Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Extractors.	0.06	0.10	0.05
Maintenance Shops	0.17	0.09	0.07
Lunch Room	0.22	0.12	0.07
Office Areas	0.12	0.06	0.03
Central Control Room	0.10	0.06	0.03

Building 9201-4

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	7224	8492	10,373
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	72.5	41	9.7

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	27.5	59	90.3
0.10 - 0.19	45	34	8.7
0.20 - 0.29	14	4.6	0.75
0.30 - 0.39	6	1.6	0.10
0.40 - 0.49	4	0.5	
0.50 - 0.59	1.6		
0.60 - 0.69	0.7		
0.70 - 0.79	0.3	3.5	0.35
0.80 - 0.89	0.4		
0.90 - 0.99	0.2		
> 1.00	0.3		0.15

Only 9.7% of the samples were above the MAC, while only 1% were above 0.20 mg/m³. The building average using all samples for January was 0.16 mg/m³, 0.10 mg/m³ for February and only 0.06 mg/m³ for March. It is quite apparent from the above that much has been accomplished during the past Quarter towards lowering the air borne concentration of solvent vapor.

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The average concentrations in mg/m^3 for various areas is as follows:

Areas	Concentration mg/m^3		
	Jan.	Feb.	Mar.
Cascade #7 1st. Level	0.08	0.05	0.04
2nd. Level	0.17	0.08	0.05
3rd. Level	0.12	0.07	0.06
4th. Level	0.11	0.07	0.05
Cascade #8 1st. Level	0.09	0.08	0.04
2nd. Level	0.17	0.11	0.04
3rd. Level	0.17	0.09	0.05
4th. Level	0.17	0.08	0.05
Cascade #9 1st. Level	0.10	0.06	0.06
2nd. Level	0.19	0.11	0.08
3rd. Level	0.14	0.07	0.05
4th. Level	0.14	0.07	0.05
Cascade #10 1st. Level	0.12	0.07	0.05
2nd. Level	0.25	0.09	0.07
3rd. Level	0.20	0.08	0.06
4th. Level	0.19	0.06	0.06
Absorber #7	0.13	0.10	0.04
8	0.24	0.15	0.04
9	0.32	0.11	0.05
10	0.14	0.10	0.04
Pump Area #7	0.14	0.10	0.05
Pump Area #8	0.23	0.11	0.07
Pump Area #9	0.18	0.15	0.06
Pump Area #10	0.20	0.12	0.08
Hanging Gardens #7	0.20	0.13	0.07
Hanging Gardens #8	0.22	0.13	0.06
Hanging Gardens #9	0.26	0.16	0.06
Hanging Gardens #10	0.28	0.14	0.07
Evaporator	0.10	0.08	0.04
Feed Prep and Extract - 1st. Level	0.06	0.09	0.03
Feed Prep and 2nd. Level	0.23	0.12	0.05
Feed Prep and - 1st. Level	0.08	0.06	0.04
Feed Prep and - 2nd. Level	0.16	0.12	0.10
Feed Prep and - 3rd. Level	0.14	0.06	0.05
Maintenance Shop	0.17	0.18	0.09
Central Control Room	0.18	0.11	0.06
Office Areas	0.06	0.09	0.04
Lunch Room	0.09	0.13	0.07
Control Lab.	-	-	0.06

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Other Sampling

Ventilation duct sampling is being carried on in both 9201-5 and 9201-4. The Fan rooms have also been sampled to check for high incoming air.

The routine samples in Building 9204-2 around Bird baths etc., show no significant concentrations of solvent vapor.

Clean clothing at the laundry is still being checked on a random basis.

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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INTER-COMPANY CORRESPONDENCE
UNION CARBIDE NUCLEAR COMPANY
A Division of Union Carbide and Carbon Corporation

To:

List

Plant:

Date: May 2, 1956

Copies To:

Subject:

Solvent Air Analysis for
Alloy Division, April 1956

- J. P. Murray
- G. A. Strasser
- W. K. Whitson
- H. C. McBirney
- G. W. Evans
- N. Dow, Jr.
- D. A. Jennings
- W. C. Moore
- H. T. Kite
- R. A. Walker
- J. C. Little
- J. W. Strohecker
- L. C. Emerson
- J. W. Ebert
- W. E. Heckert
- C. B. Newman
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- L. M. Bagwell
- File (Y-12 RC) ✓

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The following tables give the average concentrations of Solvent vapor in air for the various Alloy Division operations for the month of April.

Building 9204-4

Number of Samples taken	1924
% of Samples equal to or greater than the MAC of 0.10 mg/m ³ .	16

The Sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	84
0.10 - 0.19	12.5
0.20 - 0.40	3.5

<u>Areas</u>	<u>Average Concentration (mg/r)</u>
Bonnet Repair	0.04
Bonnet Storage	0.06
Demineralizer	0.09
Chemical Recovery	0.10
Solvent Purification	0.04
Flow Control	0.01
Blender Stations	0.05
Blender Stations - North	0.03
Blender Stations - South	0.02
Feed Prep	0.04
Cascades - North	0.06
Cascades - South	0.06
Lunch Room	0.06

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Building 9201-2

Number of Samples taken 977

% of Samples equal to or greater than
the MAC of 0.10 mg/m³. 15

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	85
0.10 - 0.19	12
0.20 - 0.60	3

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.07
PTF	0.07
Colex Tray #1	0.08
Colex Tray #2	0.06
Colex Tray #3	0.09
Mechanical Shop	0.06
At Water Fountain 2nd. Floor	0.02
Machine Shop X-10	0.03
Lunch Room	0.03

Building 9201-5

Number of Samples taken 17027

% of Samples equal to or greater than
the MAC of 0.10 mg/m³ 28

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	72
0.10 - 0.19	22

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<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
0.20 - 0.29	4
0.30 - 0.39	1
0.40 - 1.00	1

The average concentration mg/m³ for the various areas is as follows:

	<u>Cascades</u>					
	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st. Level	0.09	0.07	0.06	0.05	0.07	0.09
2nd. Level	0.12	0.09	0.08	0.08	0.05	0.07
3rd. Level	0.09	0.09	0.06	0.07	0.05	0.07
4th. Level	0.06	0.05	0.04	0.05	0.04	0.04

<u>Absorbers</u>						
<u>No. 1</u>	<u>No. 1A</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>	<u>No. 5</u>	<u>No. 6</u>
0.12	0.24	0.10	0.10	0.10	0.10	0.08

<u>Pump Areas</u>		
<u>1 and 2</u>	<u>3 and 4</u>	<u>5 and 6</u>
0.08	0.09	0.10

<u>Areas</u>	<u>Average Concentration mg/m³</u>
Purified Feed Storage	0.07
1st. Stage Feed Prep	0.08
Instrument Shop	0.06
Buffalo Pump Repair	0.05
Chemical Recovery	0.05
Extract	0.03

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<u>Areas</u>	<u>Average Concentration mg/m³</u>
Evaporator	0.05
Maintenance Area	0.06
Feed Mixing Area	0.06
Central Control Room	0.04
Office Areas	0.03
Lunch Room	0.07

Building 9201-4

Number of Samples taken	10116
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	4

The percentage distribution of the samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	96
0.10 - 0.19	3
0.20 - 0.59	1

The average concentrations in mg/m³ for various areas is as follows:

	<u>Cascades</u>			
	<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
1st. Level	0.03	0.03	0.04	0.04
2nd. Level	0.04	0.04	0.05	0.06
3rd. Level	0.04	0.04	0.05	0.05
4th. Level	0.04	0.04	0.04	0.04

Absorbers

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.04	0.03	0.04	0.02

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Injection Pump Areas

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.05	0.05	0.06	0.05

Hanging Gardens

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.07	0.06	0.05	0.05

<u>Areas</u>	<u>Average Concentration mg/m³</u>
Evaporator Area	0.04
Feed Prep 1st. Level	0.04
Feed Prep 2nd. Level	0.04
Feed Prep 1st. Level	0.04
Feed Prep 2nd. Level	0.06
Feed Prep 3rd. Level	0.05
Maintenance Shops	0.07
Central Control Room	0.06
Office Areas	0.04
Lunch. Room	0.06

From the foregoing tables concerning Buildings 9201-5 and 9201-4 the picture presented is essentially the same as for March. The building averages were reduced slightly in both cases from the March averages to 0.07 mg/m³ for 9201-5 and 0.04 mg/m³ for 9201-4.

Other routine sampling in Building 9204-2 showed no significant findings.

Leo J. LaFrance
 Leo J. LaFrance
 Industrial Hygienist
 Medical Department

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LJL:emm

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List

June 12, 1956

Solvent Air Analysis for
Alloy Division, May 1956

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W. K. Whitson
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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during May.

Building 9204-4

There were 2041 samples obtained with 11% of these samples being equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.06 mg/m³ with no individual areas having an average equal to the MAC. There were no significant changes from the previous month.

Building 9201-2

There were 1126 samples obtained with 17% equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.05 mg/m³, and no individual area had an average equal to the MAC.

Building 9201-5

15,219 samples were obtained and 74% of these were below the MAC of 0.10 mg/m³. Of the samples the MAC 21% fell between 0.10 and 0.19 mg/m³, 3.5% between 0.20 and 0.29 and 1% were equal to or greater than 0.30 mg/m³.

The building average was 0.08 mg/m³ with 10 of 42 areas sampled on a daily basis having an average concentration equal to or greater than the MAC. These areas with averages are as follows:

	mg/m ³
Cascade #1 2nd. Level	0.10
Absorber #1	0.13
Absorber #1A	0.17
" 2	0.12
" 3	0.12
" 4	0.12
" 5	0.12
" 6	0.12
Pump Area 3&4	0.13
" " 5&6	0.10

These same areas were above the MAC last month with the exception of Absorber #6 and Pump Area 3 & 4.

There were no significant changes in the other areas from the previous months results.

Building 9201-4

11,199 samples were obtained and 95% of these were below the MAC of 0.10 mg/m³. The other 5% were in 0.10 - 0.19 concentration range with only an occasional sample in excess of 0.20 mg/m³. The building average concentration was 0.04 mg/m³ and none of the 37 areas sampled on a daily basis had average concentrations equal to the MAC.

Wind Tunnels

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The incoming air supply tunnels are being checked in both 9201-4 and 9201-5 on a routine basis to make certain that the incoming air is below the MAC.

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Building 9204-2

Routine checks in 9204-2 have shown no significant findings of Solvent Vapor.

The above building summaries indicate little or no change from the month of April except for slight increase in Building 9201-5.



Leo J. Lawrence
Industrial Hygienist
Medical Department

LJL:emm

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INTER-COMPANY CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation

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To: List

Plant:

Date: July 11, 1956

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Subject: Solvent Air Analysis for
Alloy Division, June 1956.

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-2-

The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during June.

Building 9204-4

Of the 1933 samples obtained 10% were equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.04 mg/m³ and no area had an average equal to the MAC.

Building 9201-2

1,255 samples were obtained and 20% of these were equal to or greater than the MAC of 0.10 mg/m³. The average building average was 0.06 mg/m³ and no individual area had an average equal to the MAC.

Building 9201-5

14,182 samples were obtained and 74% of these were below the MAC of 0.10 mg/m³. Of the samples greater than the MAC, 20% fell between 0.10 and 0.19 mg/m³, 4% between 0.20 and 0.29 and 2% were equal to or greater than 0.30 mg/m³.

The building average was 0.08 mg/m³ with 12 of 42 areas sampled on a daily basis having an average concentration equal to or greater than the MAC. These areas with averages are as follows.

<u>Area</u>	<u>Average Concentration (mg/m³)</u>
Cascade #5 - 3rd. Level	0.10
Cascade #6 - 1st. Level	0.12
Cascade #6 - 3rd. Level	0.14
Absorber #1	0.15
Absorber #1A	0.22
Absorber #2	0.12
Absorber #3	0.11
Absorber #4	0.10
Absorber #5	0.11
Pump 3 and 4	0.15
Lunch Room	0.10

Of the above areas all were above last month except the Lunch Room and Cascades #5 and #6. Cascade #1 - 2nd. Level and Pump #5 and #6 had a lower average than the previous month. The rest of the areas in 9201-5 remained essentially the same.

Building 9201-4

10,943 samples were obtained and 95.4% of these were below the MAC of 0.10 mg/m³. Of the remaining samples 4.1% were in the range of 0.10 - 0.19 mg/m³ and 0.5% were equal to or above 0.20 mg/m³.

The building average was 0.04 mg/m³ and none of 38 areas sampled on a daily basis had average concentrations equal to the MAC.

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Building 9204-2

No significant findings of solvent vapor were reported.

The Fan rooms and wind tunnels in both 9201-4 and 9201-5 are still being sampled to ensure no significant rise in solvent vapor in incoming air.

The above summaries indicate essentially the same picture as for the month of May.

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Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during July.

Building 9204-4

There were 1,439 samples taken and 11% of these were equal to or greater than the MAC of 0.10 mg/m^3 . The average building concentration was 0.05 mg/m^3 and no individual area had an average equal to the MAC.

Building 9201-2

There were 1,099 samples obtained and 3.5% were equal to or greater than the MAC of 0.10 mg/m^3 . The building average was 0.04 and no area average was equal to or greater than the MAC.

Building 9201-5

15,679 samples were obtained in Building 9201-5. Of these 70% were less than 0.10 mg/m^3 , 24% were from $0.10 - 0.19 \text{ mg/m}^3$, 4% were from $0.20 - 0.29 \text{ mg/m}^3$ and 2% were equal to or greater than 0.30 mg/m^3 .

The building average was 0.08 mg/m^3 with 7 of 42 areas sampled on a daily basis having an average concentration equal to or greater than the MAC. These areas with averages are as follows:

<u>Area</u>	<u>Average Concentration (mg/m^3)</u>
Cascade #1, 2nd. level	0.10
Cascade #6, 3rd. level	0.10
Absorber #1	0.10
Absorber #1A	0.27
Absorber #4	0.12
Pump Area 3 and 4	0.16
Pump Area 5 and 6	0.10

This shows a reduction of 5 areas over last months summary. The balance of 9201-5 remained essentially the same.

Building 9201-4

10,065 samples were obtained in Building 9201-4. Of these 94% were below 0.10 mg/m^3 , 5% were between 0.10 and 0.19 mg/m^3 and 1% were greater than 0.20 mg/m^3 .

The building average was 0.05 mg/m^3 and none of 39 areas sampled daily had an average equal to or greater than the MAC.

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Solvent Air Analysis for
Alloy Division, August, 195

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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during August.

Building 9204-1

There were 1,948 samples obtained and 26% of these were equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.07 mg/m³ with two areas having an average equal to or greater than 0.10 mg/m³. These were Chemical Recovery with 0.10 mg/m³ and Solvent Purification with 0.19 mg/m³.

Building 9201-2

There were 970 samples taken with less than 1% equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.03 mg/m³.

Building 9201-5

There were 18,430 samples obtained in Building 9201-5. Of these, 70% were less than 0.10 mg/m³, 22.5% were from 0.10 - 0.19 mg/m³, 5% were from 0.20 - 0.29 mg/m³, 1.6% were from 0.30 - 0.39 and 0.9% were equal to or greater than 0.40 mg/m³.

The building average was 0.07 mg/m³ with 8 of 42 areas sampled on a daily basis having an average concentration equal to or greater than 0.10 mg/m³. These areas with averages are as follows:

Area

Average Concentration (mg/m³)

Cascade #6 1st. Level	0.13
Cascade #6 3rd. Level	0.10
Absorber #1	0.10
Absorber #1A	0.18
Absorber #4	0.10
Pump Area 1&2	0.12
Pump Area 3&4	0.17
Pump Area 5&6	0.11

Absorber 1A is somewhat lower than last month. The rest of the areas are essentially the same as the previous month.

Building 9201-4

Of the 11,416 samples obtained in Building 9201-4, 97% were below 0.10 mg/m³, 2.9% were between 0.10 and 0.19 mg/m³ and 0.1% were greater than 0.20 mg/m³.

The building average was 0.04 mg/m³ and none of 38 areas sampled on a daily basis had an average equal to or greater than the MAC.

The general picture for solvent areas shows a slight decrease in the air concentrations. Added absorber ventilation in 9201-5 seems to be helping in this respect.

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Leo J. LaFrance

Leo J. LaFrance

Industrial Hygienist

Medical Department

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Subject: Solvent Air Analysis
for Alloy Division
September 1956

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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during September.

Building 9204-4

There were 745 samples obtained and 8.2% of these exceeded the MAC of 0.10 mg/m³. No area had an average equal to or greater than the MAC.

Building 9201-2

There were 819 samples taken and 1.6% of these were equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.02 mg/m³.

Building 9201-5

There were 15,299 samples obtained in Building 9201-5. Of these, 78.9% were below 0.10 mg/m³, 16.9% were from 0.10 - 0.19 mg/m³, 2.5% were from 0.20 - 0.29 mg/m³, 0.8% were from 0.30 - 0.39 mg/m³, and 0.9% were greater than 0.40 mg/m³.

The building average was 0.06 mg/m³ and only 2 of 42 areas sampled on a daily basis had an average greater than the MAC. These were Absorber 1A with an average of 0.13 mg/m³ and Pump Area 1 and 2 with an average of 0.14 mg/m³.

Building 9201-5 is continuing to show a downward trend and the average of 0.06 is the lowest ever obtained for this area.

Building 9201-4

Of the 7,417 samples obtained in Building 9201-4, 98.4% were below the MAC of 0.10 mg/m³. There was 1.5% between 0.10 and 0.19 mg/m³ and only 0.1% greater than 0.20 mg/m³.

The building average was 0.03 mg/m³ and none of the 38 areas sampled on a daily basis had an average equal to or greater than the MAC.

Building 9204-X

Air sampling in Building 9204-X continues to show no significant solvent vapor findings.

Leo J. LaFrance
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Subject: Solvent Air Analysis
for October 1956

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The following is a summary of the solvent vapor sample findings in the various plant areas where solvent is used. In most areas there continues to be a downward trend in the atmospheric concentration of Solvent Vapor.

Building 9201-2

Of the 1,055 samples taken, 94.5% were less than the MAC of 0.10 mg/m^3 . The building average was 0.03 mg/m^3 and no area had an average equal to the MAC.

Building 9201-5

Of the 15,868 samples obtained, 81.3% were below the MAC of 0.10 mg/m^3 . 13.8% ranged from $0.10 - 0.19 \text{ mg/m}^3$, 1.9% from $0.20 - 0.29 \text{ mg/m}^3$ and the remaining 1% were equal to or greater than 0.30 mg/m^3 . This distribution continues to show improvement for 9201-5.

The building average was 0.07 mg/m^3 with 8 areas having an average equal to or slightly greater than the MAC.

These areas are as follows:

Area	Average Concentration mg/m^3
1st. Level Cascade #1	0.13
1st. Level Cascade #2	0.10
1st. Level Cascade #3	0.10
1st. Level Cascade #4	0.10
1st. Level Cascade #5	0.11
1st. Level Cascade #6	0.12
Pump Area 1&2	0.10
Absorber 1A	0.15

These last two areas were the only ones above the MAC last month.

Building 9201-4

Of the 7,569 samples obtained, 94.8% were below the MAC of 0.10 mg/m^3 . 3.3% ranged from $0.10 - 0.19 \text{ mg/m}^3$, 0.7% ranged from $0.20 - 0.29 \text{ mg/m}^3$ and 0.9% were greater than 0.30 mg/m^3 .

The building average was 0.04 mg/m^3 and none of 35 areas had an average equal to the MAC. Building 9201-4 continues to show low levels as in the past few months.

Building 9204-4

This building has been surveyed during dismantling operations and material and equipment checked for disposal. Atmospheric concentrations of solvent vapor have remained within reasonable limits except under conditions of burning and cutting with torches or when sizeable amounts of spillage have occurred.

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Les J. LaFrance
Industrial Hygienist
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Solvent Air Analysis
for December 1956

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Building Average</u>
9201-5	13,131	91.7	7.4	0.9	0.05 mg/m ³
9201-4	8,132	96.2	3.4	0.4	0.04 mg/m ³
9201-2	1,000	97.5	2.5	0.0	0.02 mg/m ³
9204-2	85	No Significant Findings			
Misc. *	372	86.0	12.0	2.0	

* Miscellaneous samples include changehouse checks, clean laundry, labs in other buildings, etc.

The solvent air sampling in Buildings 9201-4 and 9201-5 continues to show a downward trend. During December only one area, (Absorber 1A and an average of 0.11 mg/m³) was slightly greater than the MAC of 0.10 mg/m³. During the past two weeks however, the average of Absorber 1A has been slightly below the MAC.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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Solvent Air Analysis
for January 1957

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 x MAC</u>	<u>% Samples greater than 2 x MAC</u>	<u>Bldg. Ave.</u>
9201-5	15,726	96.3	3.4	0.3	0.04 mg/m ³
9201-4	11,104	92.1	6.6	1.3	0.04 mg/m ³
9201-2	1,122	93.7	6.2	0.1	0.04 mg/m ³
9204-2	85	No Significant Findings			
Misc. *	556	94.5	4.9	0.6	

* Miscellaneous samples include changehouse checks, clean laundry, labs in other buildings, etc.

No individual area sampled in either Bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during January.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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Solvent Air Analyses
for February 1957

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 x MAC</u>	<u>% Samples greater than 2 x MAC</u>	<u>Bldg. Ave.</u>
9201-5	13,601	96.6	3.1	0.3	0.04
9201-4	9,450	95.4	4.1	0.5	0.04
9201-2	1,018	93.8	6.2	-	0.03
9204-2	85	No Significant Findings			
Misc. *	312	95.5	0.3	5.2	

* Miscellaneous samples include changehouse checks, clean laundry, labs in other buildings, etc.

No individual area in either bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during February.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:cm

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**Solvent Air Analyses
for March 1957**

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of March.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 x MAC</u>	<u>% Samples greater than 2 x MAC</u>	<u>Bldg. Avg.</u>
9201-5	11,103	97.2	2.7	0.1	0.04
9201-4	2,619	98.0	1.9	0.1	0.03
9201-2	1,080	98.0	1.9	0.1	0.03
9201-2	88	No Significant Findings			
→ Misc.	693	67.0	32.0	2.0	

* Miscellaneous samples include changehouse checks, clean laundry, labs in other buildings, etc.

No individual area in either Bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during March.

L. J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:cm

INTER-COMPANY CORRESPONDENCE
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Solvent Air Analysis
for April 1957

RESTRICTED DATA
UNION CARBIDE NUCLEAR COMPANY
MAY 15 1957

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Ave.</u>
9201-5	13,973	98.7	1.2	0.1	0.04
9201-4	9,690	97.9	1.8	0.3	0.03
9201-2	1,066	97.8	2.2		0.03
9204-2	90	No Significant Findings			
Misc.*	306	81.0	14.0	5.0	
Sludge) Burner)	162	63.0	20.0	17.0	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, etc.

No individual area in either 9201-5 or 9201-4 had an average concentration equal to the MAC during the month of April.

Significantly high samples have been found at various locations around the sludge burning equipment, even though this operation is being carried on out of doors?

L. J. LaFrance

Leo J. LaFrance-
Industrial Hygienist
Medical Department

LJL:emm

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UNION CARBIDE NUCLEAR COMPANY
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Plant: **Y-12**

Date: **June 6, 1957**

Subject: **Solvent Air Analysis
for May 1957**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-5	14,010	98.4	1.5	.10	.04
9201-4	10,041	99.1	.80	.07	.03
9201-2	1,276	94.2	5.8		.04
9204-2	85				
Misc. *	510	93.2	2.9	3.9	
Sludge Burner	532	73.1	15.6	11.3	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, welding shop, etc.

No individual area in either 9201-5 or 9201-4 had an average concentration equal to the MAC during the month of May.

Significantly high samples have been found at various locations around the sludge burner equipment, however, with modification of the condensers and exhaust system it is hoped this situation will be corrected.

James F. Morehead

J. F. Morehead
 Industrial Hygiene Section
 Medical Department

JFM:ema

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Subject: Solvent Air Analysis
for June 1957

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of June.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 x MAC	% Samples greater than 2 x MAC	Bldg. Avg.
9201-4	9,278	97.37	2.2	1.3	.01
9201-5	12,582	98.89	1.1	.01	.03
9201-2	425	96.5	3.5		.01
9201-2	8				
Misc. *	198	86.9	9.1	4.0	
Sludge					
Burner	354	74.9	18.9	6.2	

* Miscellaneous samples include changehous, laundry, labs in other buildings, welding shop, etc.

During the month of June, no individual area in either 9201-4 or 9201-5 had an average concentration equal to the MAC.

Sample findings at various locations around the sludge burner equipment remained significantly above the MAC. Further modifications are being made to lower the vapor concentrations and have more efficient recovery of the solvent.

James F. Morehead

James F. Morehead
Industrial Hygiene Section
Medical Department

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Subject: Solvent Air Analysis
for July 1957.

RECORDED DATA


The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Building	# Samples Taken	% Samples less than MAC*	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	9,457	98.67	1.27	.04	.03
9201-5	13,277	99.79	.19	.00	.04
9201-2	1,006	94.43	5.57	-	.03
9204-2	85	100.00	.00	-	-
Misc. **	103	97.09	2.91	-	-
Sludge					
Burner	515	76.89	19.81	3.30	-

No individual area in either 9201-4 or 9201-5 had an average concentration equal to or greater than the MAC during the month of July.

The samples taken at various locations around the sludge burner equipment showed marked improvement over the previous month. However, sixty-three percent of the results greater than the MAC were received from the lockers located in the area. These high results will be eliminated with the continued good cooperation of the personnel involved.

* MAC - Maximum Allowable Concentration of mercury vapor is 0.10 mg/M³ of air.
**Miscellaneous samples include changehouse and laundry.

for 
James F. Morehead
Industrial Hygiene Section
Medical Department

FW:emm

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Subject: Solvent Air Analysis
for August 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 x MAC</u>	<u>% Samples greater than 2 x MAC</u>	<u>Bldg. Avg.</u>
9201-4	7,470	98.94	1.00	.05	.02
9201-5	11,017	99.69	.29	.02	.03
9201-2	517	100	.00		.02
9204-2	85	100	.00		.00
Misc. *	170	100	.00		
Sludge Burner	801	76.40	13.35	10.24	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, etc.

The solvent air averages in each building of the solvent production areas were well below the MAC during the month of August.

An increase in the samples 2X greater than the MAC at the Sludge Burner is primarily due to a blow-out of the furnace and the placing of contaminated equipment in the lockers. A letter of recommendations to help correct these situations and others has been written.

James F. Morehead

Industrial Hygiene Section
Medical Department

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for September 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	5,509	97.92	2.05	.03	.03
9201-5	7,938	99.27	1.50	.03	.03
9201-2	111	98.2	1.8		.01
9204-2	85	100.0			.00
Misc. *	187	83.5	11.2	5.3	
Sludge Burner	610	68.8	24.6	6.6	

* Miscellaneous samples include changehouse, laundry, Building 9204-4, Hydrogen Burner Building 9227-3, labs in other buildings, etc.

The solvent production areas remained well below the MAC for the month of September.

Various locations in Building 9204-4 were found to contain high concentrations of solvent. A letter of recommendation was written concerning the necessary precautions to be followed by the contractor during alterations.

James F. Morehead

Industrial Hygiene Section
Medical Department

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Subject: Solvent Air Analysis
for October 1957

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>
9201-4	5,782	98.83	1.14	.03	.02
9201-5	8,616	99.44	.51	.05	.02
9201-2	138	81.88	18.12	-	.06
9204-2	85	100	-	-	-
Misc.*	362	93.38	3.31	3.31	-
Sludge Burner	524	83.4	14.1	2.5	-

* Miscellaneous samples include changehouse, laundry, Building 9204-4, Hydrogen Burner Building 9727-3, 9201-5 settling pit, labs in other buildings, etc.

The solvent production areas remained well below the MAC during the month of October. The vapor concentration in Building 9201-2 showed a significant increase over the previous month. Readings in the Sludge Burner Area indicated that vapor concentrations lower than those of previous months.

James F. Morehead
Industrial Hygiene Section
Medical Department

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December 3, 1957

Originating Dept.

Answering letter date

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Neal Dow	D. A. Jennings		
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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>
9201-4	4,679	97.67	2.18	.15	.02
9201-5	7,331	98.53	1.28	.19	.03
9201-2	188	59.6	40.4	-	.09
9204-2	85	100.	-	-	.00
Misc. *	354	87.0	9.9	3.1	-
Sludge Burner	680	90.6	7.6	1.8	

* Miscellaneous samples include changehouses, Building 9204-4, Pump Repair Shop, spill that resulted in Building 9201-4, etc.

The average for the solvent production areas remained well below the MAC during the month of November. The vapor concentration in Building 9201-2/ showed a significant increase over the previous month as the result of temporary shut down of the exhaust for the basement area. Readings in the Sludge Burner Area indicated solvent vapor concentrations to be lower than those of previous months.

James F. Morehead, Jr.
Industrial Hygiene Section
Medical Department

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Subject: Solvent Air Analysis
for December 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>
9201-4	4,446	99.10	.86	.04	.02
9201-5	6,430	98.43	1.18	.39	.02
9204-2	85	100	-	-	.00
9808 Pump	228	89.91	8.77	1.32	.03
Repair					
8110 Sludge	610	90.17	7.21	2.62	-
Burner					
Misc.*	34	100	-	-	-

* Miscellaneous samples include buildings 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of December. The pump repair shop (Bldg. 9808) has been included in the routine air analysis schedule. The results indicate the level of contamination to be relatively high at various times in this building.

James F. Morehead

James F. Morehead
 Industrial Hygiene Section
 Medical Department

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Subject: **Solvent Air Analysis
for January 1958**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

<u>Bldg.</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>	
9201-4 ⁷	5,544	97.87	1.70	.43	.02	169
9201-5 ⁷	7,899	98.11	1.30	.58	.02	142
9201-2 ⁷	125	100	0	0	0	0
9204-2	85	100	0	0	0	0
9808 Pump						
Repair	264	97.35	2.65	0	.02	7
8110 Sludge						
Burner	634	91.95	3.79	4.26	-	51
Misc. *	68	100	0	0	-	0

* Miscellaneous samples include buildings 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of January.

James F. Morehead
Industrial Hygiene Section
Medical Department

FW:emm

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

<u>Bldg.</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>	
9201-4 ²	5,416	98.97	.81	.22	.02	5
9201-5 ²	7,271	98.82	1.02	.16	.02	8
9201-2 ²	42	92.86	2.38	4.76	.05	3
9204-2	85	100.00	0	0	.00	1
9808 Pump						
Repair	240	96.25	2.08	1.67	.03	9
8110 Sludge						
Burner	584	92.81	5.65	1.54	-	43
Misc. *	36	100.00	0	0	.03	9
Specials	10	100.00	0	0	-	

* Miscellaneous samples are readings taken in the pockets of clean coveralls and storage bins in 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of February. The readings taken in building 9201-2 are higher than normal as result of the stripping operations. Periodic surveys are being made in the areas that are being stripped to measure the level of contamination which in time determines the precautions necessary to work safely from a health standpoint.

James F. Morehead

James F. Morehead
 Industrial Hygiene Department

FW:emz

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Subject: Solvent Air Analysis
for March 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of March.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.	
9201-4	5,581	98.78	1.15	.07	.02	63
9201-5	7,823	99.03	.88	.09	.02	76
9201-2	125	72.00	17.60	10.40	.09	35
9204-2	85	100.00	0.00	0	.00	0
9808 Pump	252	92.86	6.35	.79	.04	18
Repair						
8110 Sludge	551	81.85	10.16	7.99	-	106
Burner						
Misc. *	34	88.24	11.76	0	.05	2
Specials	6	100.00	0	0	-	

* Miscellaneous samples are readings taken in the pockets of clean coveralls in buildings 9723-18 and 9723-19. The average for March indicates a .02 increase over that of February.

The average readings taken in the production areas are well below the MAC.

The stripping operations are in progress in the east half of building 9201-2. Respirators are being worn by personnel in the vicinity of torches and when dismantling duct work, etc. A mercury clean-up (UCNC) attempts to salvage all visible mercury as stripping proceeds. The exhaust fan for the basement was disconnected around 3-21-58 without Industrial Hygiene Department approval. High results were found on the first level after this action. A request was made to W. C. Moyers to put this exhaust back in operation.

The office, rest room and lunch room at the sludge burner continue to be a problem. Results indicate that 61.1% of the samples taken in these rooms were at the MAC or greater.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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Subject: Solvent Air Analysis
 for April 1958

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	3,877	99.05	.93	.02	.02
9201-5	5,371	99.05	.80	.15	.03
9201-2	157	71.11	22.98	5.91	.08
9201-2	85	100.00	.00	.00	.00
9808 Pump	216	93.52	6.48	.00	.04
Repair					
8110 Sludge	619	88.53	9.69	1.78	-
Burner					
Misc. *	36	97.22	2.78	.00	.04

* Miscellaneous samples are readings taken in the pockets of clean coveralls in building 9723-18 and 9723-19. The average for April indicates a .01 mg per cubic meter decrease from March.

The average readings taken in the production areas are well below the MAC. Effective 4-12-58 the plan for sampling the vapor concentrations in 9201-4 and 9201-5 less frequently was initiated. This plan provides for sampling one half of the areas in each building every day which will give complete coverage every two days.

The Sludge Burner results indicate an improvement in per cent of samples greater than two times the MAC.

The stripping operation in 9201-2 is in the final stages. Respirators were worn by personnel working in the areas being stripped where the mercury vapor level was high at various times due to cutting with torches and spillage of mercury from pipes, etc.

James F. Morehead, Jr.

James F. Morehead
 Industrial Hygiene Department

FW:emm

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Document No. MS/CHR2-0242/DEL REV Author's Telephone No. 6-0263 Acct. No. 2366000 3 Date of Request 10/23/95

Unclassified Title: REPORT-MONTHLY SOLVENT AIR ANALYSIS
(APRIL 1955 TO NOVEMBER 1960) (2090-1H-4) Feb Bldgs.

Author(s) Requestor: Steve Wiley B4, A2, A5, A-4

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date):

☐ Journal Article (Identify Journal):

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
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Solvent Urine Reports		12-60	12-60	2090-IH-4	Indef.
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Report for the Alloy
Division End Quarter
1955

J. P. Murray
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W. K. Whitson
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F. V. Wilson
D. A. Jennings
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W. J. Lawrence
Industrial Hygienist
Medical Department

LJL:clai

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Post Office Box Y
OAK RIDGE, TENN.

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**Industrial Hygiene
Report for the Alloy
Division and Quarter,
1955**

During the second quarter for 1955 24,633 general air samples for Solvent Vapor were taken in the Alloy Division buildings with the following distribution: 2,107 in 9201-1, 2,266 in 9201-2, 2,307 in 9201-4, and 17,263 in 9201-5. The percent of these samples equal to or greater than the maximum allowable concentration of 0.1 mg/m³ is as follows: 11% in 9201-1, 26% in 9201-2, 44% in 9201-4, and 58% in 9201-5.

In comparison with the 1st quarter findings there has been a significant reduction in the percentage of samples above MAC in 9201-2. Building 9204-4 has shown no significant change from 1st quarter results. Building 9201-5 showed a slight downward trend for April and May, but June findings showed little change from 1st quarter results. Attached tables give a complete summary for each building expressing the air concentration as a monthly average for all samples taken in various areas.

The Urine Participation Program was increased almost 100%. 748 people were sampled during the quarter and 122 or 26% of these contributed samples equal to or greater than the allowable Urine excretion level of 0.3 mg/l. Although more people were included in the program there was no significant change from the 1st quarter percentage above the allowable level. An attached table

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**Industrial Hygiene
Report for the Alloy
Department 2nd Quarter,
1955**

(continued)

shows a departmental breakdown of the samples submitted and the average excretion rates for each group. Individuals noted in departments not associated with the Alloy Division are those who were sampled prior to transfers.

Building 8804-4

Table I

AIF Samples

<u>Month</u>	<u>Total # of Samples</u>	<u>% Samples > MAC</u>
April	724	21
May	724	5
June	704	6

Table II

Average Monthly Concentrations in mg/m³ for various areas

<u>Area</u>	<u>April</u>	<u>May</u>	<u>June</u>
Bonnet Repair	0.09	0.04	0.07
Bonnet Storage	0.04	0.04	0.05
Demineraliser	0.06	0.05	0.05
Chemical Recovery (Spot Samples)	0.14	---	0.11
Chemical Recovery (Recorder)	0.10	0.08	0.06
Flow Control Area	0.04	0.05	0.04
Blender Stations	0.03	0.04	0.03
Extract	0.02	---	---
Feed Prep Room	0.07	0.05	0.02
Cascade North	---	0.04	0.03
Cascade South	---	0.04	0.05
Evaporator Feed Rooms	0.04	---	0.03
Solvent Purification (Spot Samples)	0.12	0.12	---
Solvent Purification (Recorder)	0.07	0.08	0.11
Instrument Shop	---	0.05	---
Electrical Shop	---	0.20	---

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Building 9201-2
Table I
Air Samples

<u>Month</u>	<u>Total # Samples</u>	<u>% Samples > MAC</u>
April	1074	53
May	711	29
June	481	26

Table II

Average Monthly Concentration in mg/m³ for various areas

<u>Area</u>	<u>April</u>	<u>May</u>	<u>June</u>
PTF	0.12	0.08	0.10
MCTF	0.13	0.08	0.06
Colex Tray #1	0.10	0.07	0.07
Colex Tray #2	0.12	0.08	0.11
Colex Tray #3	0.15	0.11	0.17
PTF #2	0.12	0.15	0.06
1st Floor N, PTF #2	---	0.09	---
Mechanical Shop	0.10	0.09	0.07
Machine Shop X-10	0.04	0.04	0.07
Water Fountain 2nd Floor	0.06	0.04	0.08

Building 9201-4
Table I
Air Samples

<u>Month</u>	<u>Total # Samples</u>	<u>% Samples > MAC</u>
May	246	16
June	2061	49

Table II

Average Monthly Concentration in mg/m³ for various areas
Cascades

<u>#10 Cascade</u>	<u>1st Level</u>	<u>2nd Level</u>	<u>3rd Level</u>	<u>4th Level</u>
May	.06	.07	.07	.03
June	.21	.19	.15	.14
<u>#9 Cascade</u>				
June	.10	.46	.37	.56

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Absorbers

	<u>#9</u>	<u>#10</u>
May	---	---
June	.23	.16

[Pump Area for Absorber #10	0.08
	Feed Decomposer Area	0.16
	Hanging Garden	0.11
	Feed Prep	0.08
	Feed Prep	0.12
	Extract	0.03

Building 9201-S
Table 1
Air Samples

Month

April
 May
 June

<u>Total # Samples</u>	<u># Samples > MAC</u>
8532	103
6332	53
2200	70

(continued)

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Table 1. Average Monthly Concentrations in mg/l for various areas

9201-5 Cascades				
<u>#1 Cascade</u>	<u>1st Level</u>	<u>2nd Level</u>	<u>3rd Level</u>	<u>4th Level</u>
April	.16	.17	.16	.09
May	.15	.19	.15	.09
June	.24	.35	.19	.18
<u>#2 Cascade</u>				
April	.14	.16	.11	.06
May	.16	.23	.14	.09
June	.29	.40	.19	.16
<u>#3 Cascade</u>				
April	.14	.16	.11	.07
May	.11	.13	.11	.06
June	.21	.32	.14	.12
<u>#4 Cascade</u>				
April	.14	.14	.09	.06
May	.11	.14	.07	.04
June	.17	.26	.12	.13
<u>#5 Cascade</u>				
April	.06	.03	.09	.06
May	.09	.02	.02	.05
June	.07	.06	.09	.05
<u>#6 Cascade</u>				
May	.11	.06	.13	.09
June	.07	.06	.12	.08

9201-5 Absorbance					
	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>
April	.17	.14	.12	.11	.07
May	.13	.10	.09	.07	.10
June	.12	.23	.22	.22	.11

<u>Pump Areas</u>		
	<u>Abs. 1&2</u>	<u>Abs. 3&4</u>
April	.19	.16
May	.20	.27
June	.30	.41

(continued)

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Purified Feed Expenses

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April
May
June

.27
.53
.45

Chemical Recovery

April
May
June

.10
.07
.54

1st Stage Feed Prep.

April
May
June

.12
.08
.48

2nd Stage Feed Prep.

April
May
June

.15
.22
.08

Mech. Shop

Inst. Shop

Elec. Shop

Buffalo Pump
Repair Area

April
May
June

.08
.14
.15

.06
.06
.07

.05
.05
.19

.14
.11
.19

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Summary of Urine Tests

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Maintenance Department

Dept.	# Participants	# Samples	# Samples 0.3 mg/l	# Participants Above 0.3 mg/l	Ave. Excretion Rate for group mg/l
2014	1	1	0	0	0.15
2015	34	37	8	24	0.21
2018	20	30	12	15	0.27
2026	41	41	2	8	0.14
2065	20	25	4	20	0.16
2153	2	6	0	0	0.10
2159	112	143	31	24	0.21
2160	92	113	28	29	0.23

Process Departments

2685	249	395	121	37	0.26
2687	19	32	7	16	0.16
2692 at Beta 4	121	128	13	11	0.14
2692 at Alpha 2	10	20	8	42	0.30

Other Departments

2000	4	4	0	0	0.10
2066	1	1	0	0	0.06
2070	2	2	1	20	0.28
2108	8	11	1	13	0.19
2142	2	2	0	0	0.17
2301	8	8	0	0	0.11
2616	1	1	0	0	0.27
2701	1	1	0	0	0.08
2792	1	1	1	100	0.42

Total # of Participants
Total # of Samples
Total # of Samples Above 0.3 mg/l
Total # of Participants above 0.3 mg/l
% of Participants above 0.3 mg/l
% of Samples Above 0.3 mg/l

745
1004
237
192
26
24

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Solvent Air Analysis
for Alloy Division
July, 1955

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F. V. Tilson
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The following tables give the average concentrations of solvent vapor in air for various areas in Alloy Division operations for the month of July.

Building 9204-4

There were 797 samples taken in 9204-4 with 6% being equal or greater than the MAC of 0.10 mg/m³.

Area**Avg. Concentration (mg/m³)**

Bonnet Repair	0.07
Bonnet Storage	0.09
Demineralizer	0.04
Chemical Recovery	0.07
Flow Control Area	0.07
Blender Stations	0.06
Blender Stations (South)	0.03
Blender Stations (North)	0.04
Feed Prep Room	0.02
Evaporator Feed Room	0.04
Solvent Purification	0.10

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SUBJECT Solvent Air Analysis for
Alley Division July, 1955

Building #201-3

there were 602 samples taken with 41% of these equal or greater than
the MAC of 0.10 mg/m³.

Area

Avg. Concentration (mg/m³)

HCIF	0.08
Colex Tray #1	0.08
Colex Tray #2	0.10
Colex Tray #3	0.15
PTF Area	0.10
PTF #2, 1st Floor	0.15
Water Fountain, 2nd Floor	0.08
Mechanical Shop	0.00
Walkway between HCIF and Trach	0.00
Machine Shop X-10	0.02
Lunch Room	0.05
Sub-basement	0.10

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Alloy Division July, 1958Building 9201-6

There were 8233 samples taken with 87% equal to or greater than the
M.C. of 0.10 mg/m³.

Cascades Ave. Concentrations mg/m³

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.33	0.45	0.28	0.24	0.10	0.16
2nd Level	0.38	0.60	0.47	0.33	0.16	0.18
3rd Level	0.60	0.42	0.37	0.28	0.28	0.29
4th Level	0.37	0.28	0.16	0.14	0.13	0.16

Absorbors Ave. Concentrations mg/m³

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.17	0.22	0.35	0.24	0.18	0.44

Pump Areas

<u>1st</u>	<u>2nd</u>	<u>3rd</u>
0.39	0.51	0.71

AreaAve. Concentration mg/m³

Purified Feed Storage	0.79
Chemical Recovery	0.44
1st Stage Feed Prep	0.22
2nd Stage Feed Prep Area	0.30
Mechanical Shop	0.11
Instrument Shop	0.08
Electrical Shop	0.11
Buffalo Pump Repair Area	0.24
Lunch Room	5.00
Control Room	0.04

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Alloy Division July, 1955

Building 9201-4

There were 2791 samples taken with 93% equal to or greater than the MAC of 0.10 mg/m³.

	<u>Cascades</u>	<u>Ave. Concentration mg/m³</u>
	#9	#10
1st level	0.22	0.33
2nd level	0.58	0.48
3rd level	0.37	0.34
4th level	0.40	0.37

<u>Area</u>	<u>Ave. Concentration mg/m³</u>
Absorber #9	0.29
Absorber #10	0.31
Pump [] for #9	0.32
Pump [] for #10	0.24
Hanging Garden #9	0.37
Hanging Garden #10	0.26
Feed Prep & Extract 1st level	0.16
Feed Prep [] 2nd level	0.29
Feed Prep [] 1st level	0.23
Feed Prep [] 2nd level	0.51
Feed Prep [] 3rd level	0.38
Evaporator Area	0.25
Electrical & Instrument Shop	0.13
Lunch Room	0.20

From the foregoing tabular data it is apparent that air levels in 9201-5 and 9201-4 increased significantly during the month of July. Indications the past few days in 9201-4 since wall removal in Absorber #10 and other measures to controll spillage in cascades that these levels are showing a downward trend.

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

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Solvent Air Analysis
for Alloy Division
August 1955

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Solvent Air Analysis for
Alloy Division - August, 1958

The following tables give the average concentrations of Solvent Vapor in air for various areas in Alloy Division operations for the month of August.

Building 9204-4

There were 1803 samples taken in 9204-4 with 17% being equal or greater than the MAC of 0.10 mg/m³.

<u>Area</u>	<u>Ave. Concentration (mg/m³)</u>
Bonnet Repair	0.11
Bonnet Storage	0.12
Demineralizer	0.09
Chemical Recovery	0.05
Flow Control Area	0.06
Blender Stations	0.07
Blender Stations (South)	0.04
Blender Stations (North)	0.03
Feed Prep Room	0.03
Solvent Purification	0.15

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Building 9201-2

There were 997 samples taken with 22% of these equal or greater than the MAC of 0.10 mg/m³.

<u>Area</u>	<u>Ave.</u>
MCTF	0.08
Colex Tray #1	0.07
Colex Tray #2	0.08
Colex Tray #3	0.10
PTF Area	0.07
PTF #2, 1st Floor	0.10
Water Fountain, 2nd Floor	0.02
Mechanical Shop	0.09
Walkway between MCTF and Track	0.06
Mechanical Shop, X-10	0.04
Lunch Room	0.03

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STEVE WILEY
10-23-95

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Building 9201-5

There were 4,098 samples taken with 77% equal or greater than the MAC of 0.10 mg/m³.

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	13
0.10 - 0.19	22
0.20 - 0.29	18
0.30 - 0.39	14
0.40 - 0.49	9
0.50 - 0.59	8
0.60 - 0.69	5
0.70 - 0.79	3
0.80 - 0.89	3
0.90 - 0.99	1
>1.00	4

From the above tabulation it is apparent that the MAC is exceeded by factors of 2 to greater than 10 about 55% of the time in the various areas sampled.

The average concentrations in mg/m³ for the various areas is as follows:

	<u>Cascades</u>					
	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.53	0.50	0.34	0.24	0.08	0.18
2nd Level	0.60	0.64	0.31	0.43	0.10	0.16
3rd Level	0.56	0.43	0.27	0.30	0.23	0.31
4th Level	0.36	0.42	0.29	0.29	0.16	0.27

Absorbers

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.26	0.25	0.17	0.18	0.13	0.12

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.61	0.58	0.60

Continued on page 4

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Building 9201-5

(Continued)

Purified Feed Storage

0.52

Chemical Recovery

0.46

1st Stage Feed Prep

0.28

2nd Stage Feed Prep

0.16

Mechanical Shop

0.12

Instrument Shop

0.06

Electric Shop

0.06

Buffalo Pump Repair Area

0.28

Lunch Room

0.07

Central Control Room

0.03

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Building 9201-4

There were 4,156 samples taken with 25% equal to or greater than the MAC of 0.10 mg/m³.

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% Samples</u>
< 0.10	15
0.10 - 0.19	41
0.20 - 0.29	29
0.30 - 0.39	9
0.40 - 0.49	4
0.50 - 0.59	1.2
0.60 - 0.69	0.4
0.70 - 0.79	0.2
0.80 - 0.89	< 0.1
0.90 - 0.99	0.1
> 1.00	0.1

From the above tabulation it is apparent that even though the percentage of samples equal to or greater than the MAC is comparable to that in Building 9201-5, the concentration range distribution is significantly different. For example only 2% of the samples taken in 9201-4 are equal or greater than 0.50 mg/m³ where as in 9201-5, 24% of all samples taken fall in this category.

The average concentrations in mg/m³ for various areas in 9201-4 is as follows:

Cascades

	<u>#8</u>	<u>#9</u>	<u>#10</u>
1ST Level	0.20	0.18	0.15
2ND Level	0.23	0.25	0.20
3RD Level	0.19	0.18	0.17
4TH level	0.15	0.24	0.22

Absorbers

	<u>#8</u>	<u>#9</u>	<u>#10</u>
	0.12	0.17	0.13

Pump Areas

	<u>#8</u>	<u>#9</u>	<u>#10</u>
	0.31	0.31	0.14

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Hanging Gardens

#8

0.36

#9

0.33

#10

0.17

Feed Prep and Extract, 1st Level

0.12

Feed Prep

2nd Level

0.19

Feed Prep

1st Level

0.15

Feed Prep

2nd Level

0.23

Feed Prep

3rd Level

0.20

Evaporator Area

0.23

Leo W. LaFrance
Industrial Hygienist
Medical Department

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SUBJECT: Stone Analysis
Chemical Division
October 1955

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October 4, 1955

Solvent Air Analysis
For the Alloy Division
September, 1955

The following tables give the average concentrations of Solvent Vapor in air for various Alloy Division operations for the month of September. Average concentrations for July and August are included for comparison.

Building 9204-4

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	797	1803	1710
% of Samples equal to or greater than MAC of 0.10 mg/m ³	6	17	13

Areas

	<u>Ave. Concentration (mg/m³)</u>		
	<u>July</u>	<u>August</u>	<u>Sept.</u>
Bonnet Repair	0.07	0.11	0.06
Bonnet Storage	0.09	0.12	0.12
Chemical Recovery	0.07	0.05	0.05
Flow Control	0.07	0.06	0.05
Blender Stations	0.05	0.07	0.06
Blender Stations (North)	0.03	0.04	0.02
Blender Stations (South)	0.04	0.03	0.03
Feed Prep	0.02	0.03	0.02
Evaporator Feed	0.04	----	0.02
Solvent Purification	0.10	0.15	0.15
Demineralizer	0.06	0.09	----
Lunch Room	----	----	0.03

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Building 9201-2

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	502	997	1158
% of Samples equal to or greater than MAC of 0.10 mg/m ³	41	22	39

<u>Areas</u>	<u>Ave. Concentration (mg/m³)</u>		
	<u>July</u>	<u>August</u>	<u>Sept.</u>
MCTF	0.08	0.08	0.11
PTF	0.10	0.07	0.07
Colex Tray #1	0.06	0.07	0.06
Colex Tray #2	0.10	0.08	0.16
Colex Tray #3	0.15	0.10	0.12
Mechanical Shop	0.09	0.09	0.14
Water Fountain, 2nd Floor	0.03	0.02	0.02
Machine Shop (X-10)	0.02	0.04	0.04
Lunch Room	0.03	0.03	0.11

Building 9201-5

	<u>July</u>	<u>August</u>	<u>Sept.</u>
Number of Samples taken	3233	4098	6064
% Samples equal to or greater than MAC of 0.10 mg/m ³	88	87	87

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>July</u>	<u>August</u>	<u>Sept.</u>
< 0.10	12	13	13
0.10 - 0.19	25	22	24
0.20 - 0.29	18	18	24
0.30 - 0.39	11	14	17
0.40 - 0.49	10	9	10
0.50 - 0.59	7.5	8	6.7
0.60 - 0.69	5.1	5	2.5
0.70 - 0.79	3.5	3	1.3
0.80 - 0.89	2.3	3	0.8
0.90 - 0.99	1.4	1	0.3
> 1.00	3	4	0.4
	23%	24%	12%

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From the above tabulation the percentage of samples above 0.5 mg/m³ has been reduced. The greatest percentage of samples fall between 0.20 and 0.50 mg/m³.

The average concentrations for the various areas are as follows:

<u>Area</u>		<u>Concentration (mg/m³)</u>		
		<u>July</u>	<u>August</u>	<u>September</u>
Cascade #1	1st Level	0.33	0.53	0.42
	2nd Level	0.58	0.60	0.58
	3rd Level	0.60	0.56	0.47
	4th Level	0.37	0.36	0.24
Cascade #2	1st Level	0.45	0.50	0.31
	2nd Level	0.60	0.64	0.37
	3rd Level	0.42	0.43	0.36
	4th Level	0.28	0.42	0.22
Cascade #3	1st Level	0.28	0.34	0.27
	2nd Level	0.47	0.31	0.34
	3rd Level	0.37	0.27	0.26
	4th Level	0.16	0.29	0.15
Cascade #4	1st Level	0.24	0.24	0.25
	2nd Level	0.33	0.43	0.33
	3rd Level	0.28	0.30	0.28
	4th Level	0.14	0.29	0.17
Cascade #5	1st Level	0.10	0.08	0.11
	2nd Level	0.16	0.10	0.12
	3rd Level	0.28	0.23	0.20
	4th Level	0.13	0.16	0.17
Cascade #6	1st Level	0.16	0.18	0.22
	2nd Level	0.18	0.16	0.20
	3rd Level	0.29	0.31	0.29
	4th Level	0.16	0.27	0.22
Absorber	#1	0.17	0.26	0.31
	#2	0.22	0.25	0.21
	#3	0.26	0.17	0.16
	#4	0.24	0.18	0.16
	#5	0.10	0.13	0.19
	#6	0.44	0.12	0.13
Pump Areas				
1 & 2		0.39	0.61	0.52
3 & 4		0.51	0.58	0.41
5 & 6		0.71	0.60	0.41

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<u>Area</u>	<u>Concentration (mg/m³)</u>		
	<u>July</u>	<u>August</u>	<u>September</u>
Purified Feed Storage	0.79	0.52	0.39
Chemical Recovery	0.56	0.46	0.37
1st Stage Feed Prep	0.22	0.28	0.32
Former 2nd Stage Feed Prep	0.20	0.15	0.43
Mechanical Shop	0.11	0.12	0.11
Instrument Shop	0.08	0.06	0.12
Electrical Shop	0.11	0.06	0.08
Buffalo Pump Repair	0.36	0.28	0.27
Lunch Room	0.09	0.07	0.25
Office Areas	---	---	0.06
Central Control Room	0.04	0.03	0.04
Extract	---	---	0.05

The areas with most significant increase are the former 2nd stage Feed Prep and the new lunch area. Now that Cascade 1 has been split and the for it probably accounts for the increase. The new room due to the fact that the air conditioning is recirculating plus the fact that it is contained in a smaller area than previously may account for its higher level of solvent vapor.

<u>Building 9201-4</u>			
	<u>July</u>	<u>August</u>	<u>September</u>
Number of Samples taken	2791	4156	7534
% of samples equal or greater than MAC of 0.10 mg/m ³	93	85	88

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>Percent Samples</u>		
	<u>July</u>	<u>August</u>	<u>September</u>
< 0.10	6.4	15	12
0.10 - 0.19	14.6	41	52
0.20 - 0.29	22	29	23
0.30 - 0.39	20.5	9	7.5
0.40 - 0.49	20	4	3.3
0.50 - 0.59	8.8	1.2	0.9
0.60 - 0.69	4.1	0.4	0.8
0.70 - 0.79	1.7	0.2	0.3
0.80 - 0.89	1.3	<0.1	0.1
0.90 - 0.99	0.4	0.1	<0.1
> 1.00	0.8	0.1	<0.1
	17% } 2% } 2.2%		

From the above distribution pattern it is apparent that control measures being taken in 9201-4 are meeting with some success. Particular since only 13% of the samples taken are above 0.30 mg/m³.

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The average concentrations in mg/m³ for various areas in 9201-4 is as follows:

Area

Concentration (mg/m³)

July

August

September

Cascade #7 1st Level
2nd Level
3rd Level
4th Level

0.29
0.21
0.16
0.14

Cascade #8 1st Level
2nd Level
3rd Level
4th Level

0.20
0.23
0.19
0.15
0.14
0.17
0.17
0.16

Cascade #9 1st Level
2nd Level
3rd Level
4th Level

0.22
0.58
0.37
0.40
0.18
0.25
0.18
0.24
0.15
0.21
0.15
0.14

Cascade #10 1st Level
2nd Level
3rd Level
4th Level

0.33
0.48
0.34
0.37
0.15
0.20
0.17
0.22
0.16
0.20
0.16
0.15

Absorber #7
#8
#9
#10

0.29
0.31

0.12
0.17
0.13
0.10
0.15
0.23
0.15

Pump #7
#8
#9
#10

0.32
0.24

0.31
0.31
0.14
0.29
0.33
0.36
0.16

Hanging Garden #7
#8
#9
#10

0.37
0.26

0.36
0.33
0.17
0.30
0.38
0.47
0.20

Evaporator Area

Feed Prep & Extract 1st Level
Feed Prep 2nd Level
" " 1st Level
" " 2nd Level
" " 3rd Level

0.25
0.16
0.29
0.23
0.51
0.38
0.23
0.12
0.12
0.19
0.15
0.23
0.20
0.21
0.14
0.17
0.14
0.16
0.12

Maintenance Shop (Millwrights)
" (Pipe fitters)
" Electrical &
" Instrument

0.13

0.24
0.09
0.03
0.40

Central Control Room

Control Lab

Office Area

Lunch Room

* New Location in office area

0.20

0.07
0.07

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22 703 55 179

Quarterly Urine Program

Data for this program is incomplete at this time. However, from the 600 plus samples already checked the percent over the arbitrary MAC of 0.30 mg/liter is showing no change from the previous two quarters.

L. J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dai

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INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION

Post Office Box 1
OAK RIDGE, TENN.

TO
LOCATION

List

November 9, 1955

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray

G. A. Strasser

W. K. Whitson

H. C. McBirney

G. W. Evans

F. V. Tilson

D. A. Jennings

G. R. Jasny

Neal Dow, Jr.

Gordon Grooms

W. C. Moore

H. T. Kite

G. W. Mitchell

J. C. Little

J. W. Strohecker

L. C. Emerson

R. A. Walker

J. W. Ebert

D. G. Hill

C. B. Newman

D. H. Rader

G. W. Flack

L. W. Bagwell

File Y-12RC ✓

SUBJECT Solvent Air Analysis for
Missy Division, October,
1955

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RESTRICTED DATA

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The following tables give the average concentrations of Solvent vapor in air for various Alloy Division operations for the month of October.

Building 9204-1

Number of Samples taken 915
% of samples equal to or greater than MAC of 0.10 mg/m³ 17.5

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
Bonnet Repair	0.12
Bonnet Storage	0.15
Chemical Recovery	0.09
Demineralizer	0.14
Flow Control	0.04
Blender Stations	0.05
Blender Stations (North)	0.03
Blender Stations (South)	0.03
Feed Prep	0.05
Solvent Purification	0.08
Lunch Room	0.03

Building 9201-21

Number of Samples taken 813
% of samples equal to or greater than MAC of 0.10 mg/m³ 47

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.12
PTF	0.10
Colex Tray #1	0.10
Colex Tray #2	0.15
Colex Tray #3	0.12
Mechanical Shop	0.19
Water Fountain 2nd Floor	0.04
Machine Shop (X-10)	0.04
Lunch Room	0.11

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Building 920T-3

Number of Samples taken 9052

% samples equal to or greater than MAC of 0.10 mg/m³ 85

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
<0.10	15
0.10 - 0.19	39
0.20 - 0.29	22.7
0.30 - 0.39	11
0.40 - 0.49	5.5
0.50 - 0.59	3.1
0.60 - 0.69	1.4
0.70 - 0.79	1.0
0.80 - 0.89	0.6
0.90 - 0.99	0.2
>1.00	0.5

The percentage of samples above 0.5 mg/m³ has been reduced again this month. The other significant point is that 54% of the samples are below 0.2 mg/m³.

The average concentrations for the various areas in mg/m³ are as follows:

Cascades

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.24	0.23	0.16	0.10	0.15	0.19
2nd Level	0.36	0.33	0.22	0.23	0.09	0.17
3rd Level	0.37	0.25	0.22	0.23	0.14	0.21
4th Level	0.31	0.14	0.15	0.15	0.09	0.14

Absorbers

<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
0.25	0.20	0.18	0.15	0.13	0.16

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.37	0.24	0.54

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Purified Feed Storage
 Chemical Recovery
 1st Stage Feed Prep
 Absorber and
 Mechanical Shop
 Instrument Shop
 Electrical Shop
 Buffalo Pump Repair
 Lunch Room
 Office Areas
 Central Control Room
 Extract

Area for Cascade 1A

0.32
 0.28
 0.22
 0.31
 0.14
 0.16
 0.15
 0.20
 0.40
 0.08
 0.08
 0.04

Of the above areas the Lunch Room has been exceedingly high during the past month. It is hoped that the proposed ventilation changes will aid in the correction of this situation.

Building 9201-4

Number of samples taken

5686

% of samples equal to or greater than MAC of 0.10 mg/m³ 83

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m³)

% of Samples

< 0.10

17

0.10 - 0.19

46

0.20 - 0.29

21

0.30 - 0.39

7

0.40 - 0.49

3.7

0.50 - 0.59

2.0

0.60 - 0.69

1.4

0.70 - 0.79

0.8

0.80 - 0.89

0.4

0.90 - 0.99

0.3

> 1.00

0.5

5.4

The above distribution pattern is essentially the same as that for September.

The average concentrations in mg/m³ for the various areas in 9201-4 is as follows:

Cascades

#7
 1st Level 0.15
 2nd Level 0.18
 3rd Level 0.14
 4th Level 0.11

#8 #9 #10
 0.10 0.25 0.26
 0.17 0.22 0.19
 0.18 0.18 0.15
 0.14 0.12

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Absorbers

#7	#8	#9	#10
0.16	0.21	0.22	0.19

Pump Areas

#7	#8	#9	#10
0.17	0.23	0.33	0.18

Hanging Gardens

#7	#8	#9	#10
0.25	0.44	0.53	0.20

Areas

Ave. Concentration (mg/m³)

Evaporator Area	0.15
Feed Prep & Extract 1st Level	0.14
Feed Prep 2nd Level	0.27
Feed Prep 1st Level	0.18
Feed Prep 2nd Level	0.17
Feed Prep 3rd Level	0.13
Maintenance Shop	0.11
Central Control Room	0.28
Office Areas	0.08
Lunch Room	0.10

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dai

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INTER-COMPANY CONFERENCE

(INSERT NAME)

COMPANY CARBIDE AND CARBON CHEMICALS CORPORATION, Post Office Box 1, OAK RIDGE, TENN.

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TO
LOCATION

List

December 5, 1955

ATTENTION
COPY TO

- J. P. Murray
- G. A. Strasser
- W. K. Whitson
- H. C. McBirney
- G. W. Evans
- F. V. Tilson
- D. A. Jennings
- G. R. Jasny
- Neal Dow, Jr.
- Gordon Grooms
- W. C. Moore
- H. T. Kite
- G. W. Mitchell
- J. C. Little
- J. W. Strohecker
- L. C. Emerson
- R. A. Walker
- J. W. Ebert
- D. G. Hill
- G. B. Newman
- D. H. Rader
- G. W. Flack
- L. W. Bagwell

SUBJECT: Solvent Air Analysis for
Safety Division, November, 1955

CONFIDENTIAL DATA

File (Y-12 RC) ✓

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The following tables give the average concentrations of Solvent Vapor in air for various Alloy Division locations for the month of November. Results for the preceding month of October are included for comparison.

Building 9204

	<u>October</u>	<u>November</u>
Number of samples taken	915	1234
% of samples equal to or greater than MAC of 0.10 mg/m ³	17.5	10
<u>Areas</u>	<u>Average concentration (mg/m³)</u>	
	<u>October</u>	<u>November</u>
Bonnet Repair	0.12	0.06
Bonnet Storage	0.15	0.11
Chemical Recovery	0.09	0.08
Demineralizer	0.14	0.10
Flow Control	0.04	0.03
Blender Stations	0.05	0.06
Blender Stations (North)	0.03	0.03
Blender Stations (South)	0.03	0.03
Feed Prep	0.05	0.03
Solvent Purification	0.08	0.09
Evaporator Feed	---	0.03
Cascades (North)	---	0.05
Cascades (South)	---	0.03
Lunch Room	0.03	0.03

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Building 9201-2

October

November

Number of samples taken

813

1040

% of samples equal to or greater than MAG
of 0.10 mg/m³

47

59

Average concentration mg/m³

October

November

Area

MCTF

0.12

0.13

PTF

0.10

0.11

Colex Tray #1

0.10

0.12

Colex Tray #2

0.15

0.12

Colex Tray #3

0.12

0.09

Mechanical Shop

0.19

0.11

At Water Fountain, 2nd Floor

0.04

0.03

Machine Shop X-10

0.04

0.06

Lunch Room

0.11

0.06

The above table shows a significant decrease in the airborne concentration in the Mechanical Shop and Lunch Room.

Samples were also taken in area of 9201-2 occupied by the Rubber Shop on 11/11 and 11/18/55. Those taken on the 11th showed airborne concentrations of 0.15 in the Vulcanizing Area and 0.10 in the Patching Area. Samples taken at holes and cracks in the floor in both the Vulcanizing and Patching areas ranged from 0.03 - 1.06 mg/m³.

The area was then cleaned and subsequent sampling on the 18th gave airborne concentrations in the Vulcanizing and Patching areas of 0.0 - 0.02 mg/m³. Anchor bolt holes and cracks still showed a fair level of Solvent contamination. If these were filled or sealed it would further reduce the possible Solvent Vapor concentrations.

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Building 8201-5

	<u>October</u>	<u>November</u>
Number of samples taken	9052	7429
% of samples equal to or greater than MAC of 0.10 mg/m ³	85	77

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>October</u>	<u>November</u>
<0.10	15	23
0.10 - 0.19	39	40
0.20 - 0.29	22.7	20.1
0.30 - 0.39	11	6.8
0.40 - 0.49	5.5	4.3
0.50 - 0.59	3.1	2.4
0.60 - 0.69	1.4	1.1
0.70 - 0.79	1.6	0.6
0.80 - 0.89	0.6	0.5
0.90 - 0.99	0.2	0.1
>1.00	0.5	0.9

It is significant to note that 63% of the samples are below 0.20 mg/m³. This is an increase of 9% over the month of October.

The average concentrations in mg/m³ for various areas is as follows:

		<u>Concentration (mg/m³)</u>	
<u>Area</u>		<u>October</u>	<u>November</u>
Cascade #1	1st Level	0.24	0.20
	2nd Level	0.36	0.33
	3rd Level	0.37	0.20
	4th Level	0.31	0.17
Cascade #2	1st Level	0.23	0.32
	2nd Level	0.33	0.26
	3rd Level	0.25	0.18
	4th Level	0.14	0.14
Cascade #3	1st Level	0.16	0.18
	2nd Level	0.22	0.19
	3rd Level	0.22	0.15
	4th Level	0.15	0.14
Cascade #4	1st Level	0.10	0.20
	2nd Level	0.23	0.23
	3rd Level	0.23	0.21
	4th Level	0.15	0.13

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Area	Concentration (mg/m ³)	
	October	November
Cascade #5 1st Level	0.15	0.16
2nd Level	0.09	0.10
3rd Level	0.14	0.11
4th Level	0.09	0.09
Cascade #6 1st Level	0.19	0.20
2nd Level	0.17	0.19
3rd Level	0.21	0.17
4th Level	0.14	0.12
Absorber #1	0.25	0.18
Absorber #2	0.20	0.13
Absorber #3	0.18	0.17
Absorber #4	0.15	0.11
Absorber #5	0.13	0.10
Absorber #6	0.16	0.09
Pump Area 1 & 2	0.37	0.28
Pump Area 3 & 4	0.24	0.26
Pump Area 5 & 6	0.54	0.70
Purified Feed Storage	0.32	0.28
Chemical Recovery	0.28	0.19
1st Stage Feed Prep	0.22	0.10
and Pump for 1A	0.31	0.24
Mechanical Shop	0.14	0.26
Instrument Shop	0.16	0.11
Electrical Shop	0.15	0.16
Buffalo Pump Repair	0.20	0.15
Lunch Room	0.40	0.31
Office Areas	0.08	0.19
Central Control Room	0.08	0.38
Extract	0.04	0.06

The above table of average concentrations for November does not indicate any significant change for the building as a whole when compared with the October averages.

Building 9201-4

	October	November
Number of samples taken	5686	5734
% of Samples equal to or greater than MAC of 0.10 mg/m ³	83	77

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ORIGINAL FILE OUT OF ORDER —
LETTER HEADING, AND PAGES
~~6~~ 2 THROUGH 5 MISSING
FROM BEGINNING OF THIS
DOCUMENT.

STEVE WILEY
10-23-95

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- 6 -

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m³)

% of Samples

October

November

<0.10	17	23.2	
0.10 - 0.19	46	45.5	
0.20 - 0.29	21	19.2	
0.30 - 0.39	7	6.5	
0.40 - 0.49	3.7	3.3	
0.50 - 0.59	2.0	1.3	
0.60 - 0.69	1.4	0.6	
0.70 - 0.79	0.8	5.4	2.5
0.80 - 0.89	0.4	0.1	
0.90 - 0.99	0.3	0.0	
>1.00	0.5	0.4	

There is a gain of about 6% in the number of samples below 0.20 mg/m³ over the month of October.

The average concentrations in mg/m³ for the various areas in 9201-4 are as follows:

Area

Average concentration (mg/m³)

October

November

Cascade #7	1st Level	0.15	0.12
	2nd Level	0.18	0.17
	3rd Level	0.14	0.15
	4th Level	0.11	0.13
Cascade #8	1st Level	0.10	0.09
	2nd Level	0.17	0.14
	3rd Level	0.18	0.13
	4th Level	0.14	0.11
Cascade #9	1st Level	0.25	0.20
	2nd Level	0.22	0.22
	3rd Level	0.18	0.18
	4th Level	0.12	0.14
Cascade #10	1st Level	0.26	0.21
	2nd Level	0.19	0.18
	3rd Level	0.15	0.14
	4th Level	0.10	0.12
Absorber #7		0.16	0.15
Absorber #8		0.21	0.16
Absorber #9		0.26	0.29
Absorber #10		0.19	0.21
Pump Area #7		0.17	0.17
Pump Area #8		0.23	0.18
Pump Area #9		0.33	0.27
Pump Area #10		0.18	0.18

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Area	Average Concentration (mg/m ³)	
	October	November
Hanging Garden #7	0.25	0.36
Hanging Garden #8	0.44	0.34
Hanging Garden #9	0.53	0.30
Hanging Garden #10	0.20	0.23
Evaporator Area	0.15	0.13
Feed Prep & Extract 1st Level	0.14	0.08
Feed Prep 1st Level	0.18	0.14
Feed Prep 2nd Level	0.17	0.18
Feed Prep 3rd Level	0.13	0.12
Maintenance Shop	0.11	0.16
Central Control Room	0.28	0.18
Office Areas	0.08	0.05
Lunch Room	0.10	0.06

Again, as in 9201-5 the above averages do not indicate any significant change from the October averages.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dai

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INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION

Post Office Box Y
OAK RIDGE, TENN.

TO List
LOCATION

DATE January 6, 1956

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray
G. A. Strasser
W. K. Whitson
H. C. McBirney
G. W. Evans
F. V. Tilson
D. A. Jennings
G. R. Jasny
Neal Dow, Jr.
Gordon Grooms
W. C. Moore
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J. C. Little
J. W. Strohecker
L. C. Emerson
R. A. Walker
J. W. Ebert
D. G. Hill
C. B. Newman
D. H. Rader
G. W. Flack
L. W. Bagwell

SUBJECT Solvent Air Analysis for
Alloy Division, December,
1955

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RESTRICTED DATA

File (Y-12RC)

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

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The following tables give the average concentrations of Solvent Vapor in air for the various mill operations for the month of December. Results for October and November are included for comparison.

Building 9204-4

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of samples taken	915	1234	1183
% of samples equal to or greater than the MAC of 0.10 mg/m ³	27.5	10	9

Areas

Average Concentration (mg/m³)

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Bonnet Repair	0.12	0.06	0.10
Bonnet Storage	0.15	0.11	0.08
Chemical Recovery	0.09	0.08	0.12
Demineralizer	0.14	0.10	0.08
Flow Control	0.04	0.03	0.03
Blender Stations	0.05	0.06	0.05
Blender Stations (North)	0.03	0.03	0.04
Blender Stations (South)	0.03	0.03	0.03
Feed Prep	0.05	0.03	0.05
Solvent Purification	0.08	0.09	0.08
Evaporator Feed	---	0.03	---
Cascades (North)	---	0.05	0.04
Cascades (South)	---	0.03	0.04
Lunch Room	0.03	0.03	0.05

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Building 9201-2

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of samples taken	813	1040	1072
% of samples equal to or greater than the MAC of 0.10 mg/m ³	27	59	30

The distribution of the samples by concentration range for December is as follows:

Less than 0.10 mg/m ³	70%
0.10 - 0.19 mg/m ³	27%
0.20 - 0.40 mg/m ³	3%

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
MCTF	0.12	0.13	0.09
PTF	0.10	0.11	0.08
Colex Tray #1	0.10	0.12	0.09
Colex Tray #2	0.15	0.12	0.11
Colex Tray #3	0.12	0.09	0.08
Mechanical Shop	0.19	0.11	0.05
At Water Fountain, 2nd Floor	0.04	0.03	0.04
Machine Shop X-10	0.04	0.06	0.04
Lunch Room	0.11	0.06	0.07

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Building 9201-8

	Oct.	Nov.	Dec.
Number of samples taken	9052	7429	8379
% of samples equal to or greater than MAC of 0.10 mg/m ³	85	77	77

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m ³)	Oct.	Nov.	Dec.
<0.10	15	23	23
0.10 - 0.19	39	40	39
0.20 - 0.29	22.7	20.1	25
0.30 - 0.39	11	6.8	8.4
0.40 - 0.49	5.5	4.3	3.1
0.50 - 0.59	3.4	2.4	0.9
0.60 - 0.69	1.4	1.1	0.4
0.70 - 0.79	1.0	0.6	0.2
0.80 - 0.89	0.6	0.5	0.1
0.90 - 0.99	0.2	0.1	0.1
>1.00	0.5	0.9	0.3

2.0

The percentage of samples above 0.50 mg/m³ has been reduced again during December. However the percentage less than 0.20 mg/m³ has remained the same.

Areas

Average Concentration (mg/m³)

	Oct.	Nov.	Dec.
Cascade #1 1st Level	0.24	0.20	0.26
2nd Level	0.36	0.33	0.30
3rd Level	0.37	0.20	0.25
4th Level	0.31	0.17	0.17
Cascade #2 1st Level	0.23	0.32	0.28
2nd Level	0.33	0.26	0.29
3rd Level	0.25	0.18	0.20
4th Level	0.14	0.14	0.15
Cascade #3 1st Level	0.16	0.18	0.17
2nd Level	0.22	0.19	0.20
3rd Level	0.22	0.15	0.21
4th Level	0.15	0.14	0.17
Cascade #4 1st Level	0.16	0.20	0.15
2nd Level	0.23	0.23	0.23
3rd Level	0.23	0.21	0.21
4th Level	0.15	0.13	0.15

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<u>Areas</u>		<u>Average Concentration (mg/m³)</u>		
		<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Cascade #5	1st Level	0.15	0.16	0.13
	2nd Level	0.09	0.10	0.07
	3rd Level	0.14	0.11	0.12
	4th Level	0.09	0.09	0.07
Cascade #6	1st Level	0.19	0.20	0.17
	2nd Level	0.17	0.19	0.08
	3rd Level	0.21	0.17	0.16
	4th Level	0.14	0.12	0.13
Absorber #1		0.25	0.18	0.14
Absorber #2		0.20	0.13	0.20
Absorber #3		0.18	0.17	0.22
Absorber #4		0.15	0.11	0.23
Absorber #5		0.13	0.10	0.09
Absorber #6		0.16	0.09	0.13
Pump Area 1 & 2		0.37	0.28	0.26
Pump Area 3 & 4		0.24	0.26	0.25
Pump Area 5 & 6		0.54	0.70	0.33
Purified Feed Storage		0.32	0.28	0.16
Chemical Recovery		0.28	0.19	0.10
1st Stage Feed Prep		0.22	0.10	0.09
Pump for 1A		0.31	0.24	0.28
Mechanical Shop		0.14	0.26	0.16
Instrument Shop		0.16	0.11	0.12
Electrical Shop		0.15	0.16	0.16
Buffalo Pump Repair		0.20	0.15	0.14
Lunch Room		0.40	0.31	0.31
Office Areas		0.08	0.19	0.07
Central Control Room		0.08	0.38	0.05
Extract		0.04	0.06	0.08
Evaporator		0.04	0.06	0.23
		147	882	811

The above tables indicate no significant changes in the averages on the Cascades other than a slight downward trend on Cascade #6. Absorber #1 has shown a progressive decrease during the quarter. Pump area for 5 & 6, Purified Feed Storage, Chemical Recovery, and 1st Stage Feed Prep have also shown a decrease over previous averages. The Office Areas and CCR are down from last months average while the Lunch Area remains unchanged.

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Building 9201-4

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Number of Samples taken	5686	5734	7073
% of samples equal to or greater than MAC of 0.10 mg/m ³	83	77	81

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
<0.10	17	23.2	19
0.10 - 0.19	46	45.5	36
0.20 - 0.29	21	19.2	20
0.30 - 0.39	7	6.5	10
0.40 - 0.49	3.7	3.3	6.6
0.50 - 0.59	2.0	1.3	2.7
0.60 - 0.69	1.4	0.6	1.9
0.70 - 0.79	0.8	5.4	0.1
0.80 - 0.89	0.4	0.1	0.8
0.90 - 0.99	0.3	0.0	0.4
>1.00	0.5	0.4	1.8

The increase in the percentage of samples above 0.20 and 0.50 mg/m³ was influenced by the alteration work carried on during December.

The average concentrations in mg/m³ for the various areas in 9201-4 are as follows:

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Cascade #7	1st Level	0.15	0.12	0.09
	2nd Level	0.18	0.17	0.14
	3rd Level	0.14	0.15	0.16
	4th Level	0.11	0.13	0.15
Cascade #8	1st Level	0.10	0.09	0.15
	2nd Level	0.17	0.14	0.19
	3rd Level	0.18	0.13	0.20
	4th Level	0.14	0.11	0.16
Cascade #9	1st Level	0.25	0.20	0.13
	2nd Level	0.22	0.22	0.23
	3rd Level	0.18	0.18	0.19
	4th Level	0.12	0.14	0.19

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Areas

Average Concentration (mg/m³)

		<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Cascade #10	1st Level	0.26	0.21	0.19
	2nd Level	0.19	0.18	0.24
	3rd Level	0.15	0.14	0.25
	4th Level	0.10	0.12	0.27
Absorber #7		0.16	0.15	0.41
Absorber #8		0.21	0.16	0.31
Absorber #9		0.26	0.29	0.36
Absorber #10		0.19	0.21	0.32
Pump Area #7		0.17	0.17	0.27
	#8	0.23	0.18	0.25
	#9	0.33	0.23	0.30
	#10	0.18	0.17	0.16
Hanging Gardens #7		0.25	0.36	0.36
	#8	0.44	0.34	0.27
	#9	0.53	0.30	0.44
	#10	0.20	0.23	0.25
Evaporator Area		0.15	0.13	0.12
Feed Prep & Extract	1st Level	0.14	0.08	0.12
Feed Prep	2nd Level	0.27	0.34	0.26
Feed Prep	1st Level	0.18	0.14	0.16
Feed Prep	2nd Level	0.17	0.18	0.19
Feed Prep	3rd Level	0.13	0.12	0.17
Maintenance Shop		0.11	0.16	0.21
Central Control Room		0.28	0.18	0.25
Office Areas		0.08	0.05	0.06
Lunch Room		0.10	0.06	0.14
		740	666	831

There was an increase in the overall average for 9201-4 during December. Contributing Areas were Cascade #10, All Absorber Areas, Pump Area #7 and the Maintenance Shop.

Source Samples

Samples for Solvent Vapor from various suspected sources have been taken in 9201-4 and 9201-5. In 9201-4, 406 samples were taken and 480 in 9201-5 during December.

These samples were around floor drains, cracks in the floors etc., pumps, packing glands, motor drive units, valves, joints, catch buckets, fan rooms, and other miscellaneous pieces of equipment. All showed high levels of contamination or leakage etc. and emphasize the need for stopping leakage and maintaining as high a level of plant cleanliness as possible.

Leo J. LaFrance

Industrial

Medical Department

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LJL:dip

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

List

DATE February 10, 1956

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray

SUBJECT Solvent Air Analysis for
Alloy Division, January, 19

G. A. Strasser

W. K. Whitson

H. C. McBirney

G. W. Evans

F. V. Tilson

D. A. Jennings

Neal Dow, Jr.

Gordon Grooms

W. C. Moore

H. T. Kite

R. A. Walker

J. C. Little

J. W. Strohecker

L. C. Emerson

J. W. Ebert

D. G. Hill

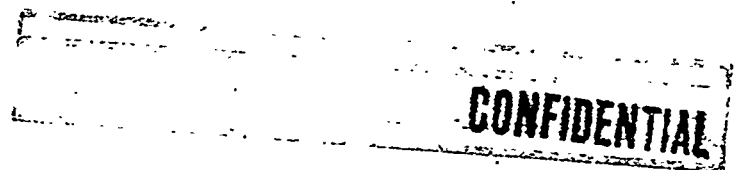
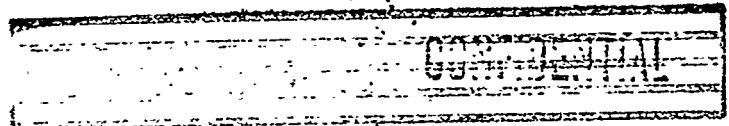
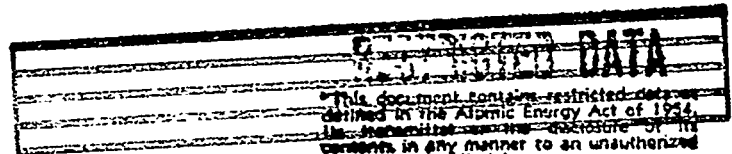
C. B. Newman

D. H. Rader

G. W. Flack

L. W. Bagwell

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The following tables give the average concentrations of Solvent Vapor in air for the various Alloy Division operations for the month of January.

Building 9204-4

Number of Samples taken 1633

% of Samples equal to or greater than the MLC of 0.10 mg/m³ 25

The sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
<0.10	75
0.10 - 0.19	20
0.20 - 0.29	3.5
0.30 - 0.39	1.0
0.40 - 0.60	0.5

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
Bonnet Repair	0.10
Bonnet Storage	0.12
Chemical Recovery	0.12
Demineralizer	0.12
Flow Control	0.08
Blender Stations	0.08
Blender Stations (North)	0.04
Blender Stations (South)	0.04
Feed Prep	0.06
Solvent Purification	0.11
Cascades (North)	0.03
Cascades (South)	0.03
Lunch Room	0.07

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Building 9201-2

Number of Samples taken 1092

% of Samples equal to or greater than the MAC
of 0.10 mg/m³ 36.5

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	63.5
0.10 - 0.19	33
0.20 - 0.29	3
0.30 - 0.39	0.5

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.11
PTF	0.11
Colex Tray #1	0.12
Colex Tray #2	0.08
Colex Tray #3	0.06
Mechanical Shop	0.05
At Water Fountain 2nd Floor	0.03
Machine Shop X-10	0.04
Lunch Room	0.03
Electrical Shop	0.06
Instrument Shop	0.04

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Building 9201-5

Number of Samples taken 9556
% of Samples equal to or greater than the MAC
of 0.10 mg/m³ 69

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	31
0.10 - 0.19	45.6
0.20 - 0.29	16
0.30 - 0.39	5
0.40 - 0.49	1.4
0.50 - 0.59	0.4
0.60 - 0.69	0.3
0.70 - 0.79	0.1
0.80 - 0.89	0.1
0.90 - 0.99	0.1
≥ 1.00	0.2

1%

The percentage of samples above 0.50 mg/m³ was reduced to 1% during January. It is also significant that about 77% of the samples were below 0.20 mg/m³. This is the first time that this has occurred since May, 1955.

The average concentrations for the various areas in mg/m³ are as follows:

Cascades

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st Level	0.19	0.16	0.13	0.08	0.13	0.18
2nd Level	0.29	0.20	0.19	0.15	0.07	0.09
3rd Level	0.22	0.17	0.18	0.14	0.12	0.15
4th Level	0.13	0.10	0.14	0.12	0.08	0.09

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STEVE WILEY
10-23-95

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Absorbers

#1	#1A	#2	#3	#4	#5	#6
0.10	0.19	0.11	0.17	0.12	0.07	0.08

Pump Areas

<u>1 & 2</u>	<u>3 & 4</u>	<u>5 & 6</u>
0.22	0.22	0.18
Purified Feed Storage		0.24
1st Stage Feed Prep		0.09
Instrument Shop		0.17
Buffalo Pump Repair		0.14
Chemical Recovery		0.09
Evaporator Room		0.25
Feed Mixing Area		0.21
Extractors		0.06
Maintenance Shops		0.17
Lunch Room		0.22
Office Areas		0.12
Central Control Room		0.10

In line with the sample distribution pattern for 9201-5, there have been some downward trends indicated in various areas while others have remained unchanged.

Building 9201-4

Number of Samples taken 7224

% of Samples equal to or greater than the MAC of 0.10 mg/m³ 72.5

The percentage distribution of these samples in various concentration ranges is as follows:

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<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
<0.10	27.5
0.10 - 0.19	45
0.20 - 0.29	14
0.30 - 0.39	6
0.40 - 0.49	4
0.50 - 0.59	1.6
0.60 - 0.69	0.7
0.70 - 0.79	0.3
0.80 - 0.89	0.4
0.90 - 0.99	0.2
≥1.00	0.3

3.5

There has been a reduction in the percentage of samples equal to or greater than 0.50 mg/m³ from the previous month. There has also been an increase in the percentage of samples below 0.20 mg/m³.

The average concentrations for various areas in mg/m³ is as follows:

Cascades

	<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
1st Level	0.08	0.09	0.10	0.12
2nd Level-	0.17	0.17	0.19	0.25
3rd Level	0.12	0.17	0.14	0.20
4th Level	0.11	0.17	0.14	0.19

Absorbers

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.13	0.24	0.32	0.14

Pump Areas

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.14	0.23	0.18	0.20

Hanging Gardens

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.20	0.22	0.26	0.28

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~~CONFIDENTIAL~~Building 9201-4
(continued)AreasAverage Concentrations (mg/m³)

Evaporator	0.10
Feed Prep and Extract 1st Level	0.06
Feed Prep 2nd Level	0.23
Feed Prep 1st Level	0.08
Feed Prep 2nd Level	0.16
Feed Prep 3rd Level	0.14
Maintenance Shop	0.17
Central Control Room	0.18
Office Areas	0.06
Lunch Room	0.09

There has been a reduction in most areas during January, although a few have stayed at the previous months averages. 38/622

Source Samples

Special sampling to determine sources of high solvent vapor has continued in both 9201-4 and 9201-5. These samples have continued to emphasize the need for controlling leakage and the necessity for a high level of plant cleanliness.

Other Sampling

On January 1, 1956, a large spill of material occurred on the South end of Cascade #6. This situation was sampled to determine how high the air levels were during such a situation. For at least 12 hours after the release concentrations were equal to or greater than 2.5 mg/m³. As the cleaning program progressed the air levels descended by January 4, 1956, to the previous levels obtained in this area during December.

A program of sampling all exhaust outlets from Alpha 5 is in progress and should be complete in the near future. This is to determine with what efficiency the present ventilation is helping to lower the solvent vapor levels in the building.

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:dip

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INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY. LOCATION

Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

List

DATE March 8, 1946

ATTENTION
COPY TO

J. P. Murray
O. A. Strasser
W. K. Whitson
H. G. McBirney
G. W. Evans
F. V. Tilson
D. A. Jennings
Neal Dow, Jr.
W. C. Moore
H. T. Kite
R. A. Walker
J. C. Little
J. W. Strohacker
L. C. Emerson
J. W. Ebert
W. E. Heckert
C. B. Newman
D. O. Mill
D. H. Rader
G. W. Flack
L. W. Bagwell
File (Y-12 RC) ✓

ANSWERING LETTER DATE

SUBJECT Solvent Air Analysis for
Alloy Division, February 19

RESTRICTED DATA

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defined in the Atomic Energy Act of 1954.
No transmission or the disclosure of its
contents to unauthorized persons is prohibited.

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The following tables give the average concentrations of Solvent Vapor in air for the various Alloy Division operations for the month of February. Averages for January are included for comparison.

Building 2204-4

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	1633	1463
% of Samples equal to or greater than the MAB of 0.10 mg/m ³	23	14

The sample distribution pattern for 2204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	75	84
0.10 - 0.19	20	12
0.20 - 0.29	5.3	2
0.30 - 0.39	1.0	< 0.1
0.40 - 0.50	0.5	< 0.1

Areas

Average Concentration (mg/m³)

	<u>Jan.</u>	<u>Feb.</u>
Bonnet Repair	0.10	0.05
Bonnet Storage	0.12	0.03
Chemical Recovery	0.12	0.09
Demineralizer	0.12	0.03
Flow Control	0.03	0.03
Blender Stations	0.03	0.03
Blender Stations (North)	0.04	0.03
Blender Stations (South)	0.04	0.02
Feed Prep	0.03	0.03
Solvent Purification	0.11	0.09

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AreasAverage Concentration (mg/m³)

	<u>Jan.</u>	<u>Feb.</u>
Cascades (North)	0.03	-
Cascades (South)	0.03	-
Lunch Room	0.07	0.02
Welding Shop	-	0.07
Degreaser Area	-	0.08

Building 9201-S

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	1093	985
% of Samples equal to or greater than the MAS of 0.10 mg/m ³	55.5	45

The sample distribution pattern for 9201-S is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	44.5	55
0.10 - 0.19	55	37.5
0.20 - 0.29	3	5.0
0.30 - 0.39	0.5	1.5
0.40 - 0.60	0	0.9

AreasAverage Concentration (mg/m³)

	<u>Jan.</u>	<u>Feb.</u>
MCIF	0.11	0.11
PIF	0.11	0.11
Colex Tray #1	0.12	0.11
Colex Tray #2	0.08	0.18
Colex Tray #3	0.06	0.13
Mechanical Shop	0.05	0.07
At Water Fountain 2nd. Floor	0.03	0.06

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Areas

Average Concentration (mg/m³)

	<u>Jan.</u>	<u>Feb.</u>
Machine Shop X-10	0.04	0.03
Lunch Room	0.03	0.06
Electrical Shop	0.06	-
Instrument Shop	0.04	-
How Tray Area	-	0.12

Building 9201-S

Number of Samples taken

Jan.
9556

Feb.
13,605

% of Samples equal to or greater than the MAC
of 0.10 mg/m³

69

49.7

The percentage distribution of these samples in various concentration ranges is as follows:

Concentration Range (mg/m³)

% of Samples

	<u>Jan.</u>	<u>Feb.</u>
< 0.10	31	50.3
0.10 - 0.19	45.6	39.3
0.20 - 0.29	16	8.1
0.30 - 0.39	5	1.5
0.40 - 0.49	1.4	0.8
0.50 - 0.59	1	0.3
0.60 - 0.69		
0.70 - 0.79		
0.80 - 0.89		
0.90 - 0.99		
> 1.00		

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There has been a further decrease in the percentage of samples above the MAC. It is quite significant that only 10% of the samples were greater than 0.20 mg/m³. The average concentration for the building as determined by using all samples is 0.10 mg/m³ for February. This average was 0.15 mg/m³ for January.

The average concentrations for the various areas in mg/m³ is as follows:

Areas		Concentration (mg/m ³)	
		January	February
Cascade #1	1st. Level	0.19	0.13
	2nd. Level	0.29	0.15
	3rd. Level	0.21	0.14
	4th. Level	0.13	0.08
Cascade #2	1st. Level	0.15	0.11
	2nd. Level	0.29	0.15
	3rd. Level	0.17	0.14
	4th. Level	0.10	0.08
Cascade #3	1st. Level	0.13	0.11
	2nd. Level	0.19	0.12
	3rd. Level	0.18	0.11
	4th. Level	0.14	0.07
Cascade #4	1st. Level	0.09	0.08
	2nd. Level	0.15	0.11
	3rd. Level	0.14	0.13
	4th. Level	0.12	0.08
Cascade #5	1st. Level	0.13	0.08
	2nd. Level	0.07	0.05
	3rd. Level	0.12	0.10
	4th. Level	0.08	0.05
Cascade #6	1st. Level	0.13	0.13
	2nd. Level	0.09	0.07
	3rd. Level	0.15	0.13
	4th. Level	0.09	0.07
Absorber #1		0.10	0.11
Absorber #1A		0.19	0.13
Absorber #2		0.11	0.10
Absorber #3		0.17	0.13
Absorber #4		0.12	0.11
Absorber #5		0.07	0.10
Absorber #6		0.08	0.12
Pump Area 1 and 2		0.22	0.14
Pump Area 3 and 4		0.21	0.13
Pump Area 5 and 6		0.18	0.12

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Areas

	<u>Concentration (ng/m³)</u>	
	<u>JANUARY</u>	<u>FEBRUARY</u>
Purified Feed Storage	0.24	0.12
1st. Stage Feed Prep	0.09	0.09
Instrument Shop	0.17	0.07
Buffalo Pump Repair	0.14	0.11
Chemical Recovery	0.09	0.09
Evaporator Room	0.25	0.09
Feed Mixing Area	0.31	0.14
Extractions	0.08	0.10
Maintenance Shops	0.17	0.39
Lunch Room	0.22	0.12
Office Areas	0.12	0.06
Central Control Room	0.10	0.06

Building 2001a

	<u>Jan.</u>	<u>Feb.</u>
Number of Samples taken	6134	8492
% of Samples equal to or greater than the MAC of 0.10 ng/m ³	72.5	41

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (ng/m³)</u>	<u>% of Samples</u>	
	<u>Jan.</u>	<u>Feb.</u>
< 0.10	27.5	59
0.10 - 0.19	45	34
0.20 - 0.29	14	4.6
0.30 - 0.39	4	1.6
0.40 - 0.49	4	0.5
0.50 - 0.59	1.6	
0.60 - 0.69	0.7	
0.70 - 0.79	0.3	
0.80 - 0.89	0.1	
0.90 - 0.99	0.2	
> 1.00	0.3	

3.5

0.35

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The most significant feature of the above distribution pattern is that only 7% of the samples were greater than 0.20 mg/m^3 . The fact that only 4% of the samples exceeded the MAC is further indication of a decrease in the air concentrations.

The building average for February is 0.10 mg/m^3 as compared with 0.16 mg/m^3 for January.

The average concentrations in mg/m^3 for various areas is as follows:

Areas	Concentration (mg/m^3)	
	January	February
Cascade #7 1st. Level	0.58	0.05
2nd. Level	0.17	0.08
3rd. Level	0.18	0.07
4th. Level	0.11	0.07
Cascade #8 1st. Level	0.09	0.09
2nd. Level	0.17	0.11
3rd. Level	0.17	0.09
4th. Level	0.17	0.08
Cascade #9 1st. Level	0.10	0.06
2nd. Level	0.19	0.11
3rd. Level	0.14	0.07
4th. Level	0.14	0.07
Cascade #10 1st. Level	0.12	0.07
2nd. Level	0.25	0.09
3rd. Level	0.20	0.08
4th. Level	0.19	0.08
Absorber #7	0.13	0.10
Absorber #8	0.24	0.15
Absorber #9	0.38	0.21
Absorber #10	0.14	0.10
Pump Area #7	0.14	0.10
Pump Area #8	0.23	0.11
Pump Area #9	0.18	0.15
Pump Area #10	0.20	0.12
Hanging Gardens #7	0.20	0.15
Hanging Gardens #8	0.23	0.13
Hanging Gardens #9	0.25	0.16
Hanging Gardens #10	0.28	0.14
Evaporator	0.10	0.08
Feed Prep and Extract 1st. Level	0.04	0.02
Feed Prep and 2nd. Level	0.23	0.12
Feed Prep and 1st. Level	0.23	0.06
Feed Prep and 2nd. Level	0.18	0.12
Feed Prep and 3rd. Level	0.14	0.06

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<u>Areas</u>	<u>Concentration (mg/m³)</u>	
	<u>JANUARY</u>	<u>FEBRUARY</u>
Maintenance Shop	0.17	0.18
Central Control Room	0.18	0.11
Office Areas	0.08	0.09
Lunch Room	0.09	0.15
Electrical & Instrument Shop		0.13

Source Sampling

Sampling to determine high sources of solvent vapor is still being carried on in both 9201-1 and 9201-2.

Other Sampling

Samples have been taken in the General Machine Shops in Bldg. 9201-1 to determine if a solvent vapor hazard existed during machining of contaminated parts.

These samples and others taken in the past indicate that no appreciable amounts of solvent vapor are present during these operations.

L. J. LaFrance

Lee J. LaFrance
Industrial Hygienist
Medical Department

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COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

Post Office Box Y
OAK RIDGE, TENN.

TO
LOCATION

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DATE April 11, 1956

ATTENTION
COPY TO

ANSWERING LETTER DATE

SUBJECT Solvent Air Analysis for
Alloy Division, March 1956

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H. C. McBirney

G. W. Evans

Neal Dow, Jr.

D. A. Jennings

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The following tables give the average concentrations of Solvent vapor in air for the various Alloy Division operations for the month of March. Averages for January and February are included for comparison.

Building 9204-4

	<u>Jan.</u> 1963	<u>Feb.</u> 1963	<u>Mar.</u> 2024
Number of Samples taken			
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	25	14	23

The sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	75	86	77
0.10 - 0.19	20	12	18.4
0.20 - 0.29	3.5	2	4.1
0.30 - 0.39	1.0	<0.1	0.4
0.40 - 0.60	0.5	<0.1	0.1

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Bonnet Repair	0.10	0.05	0.04
Bonnet Storage	0.12	0.06	0.09
Chemical Recovery	0.12	0.09	0.13
Demineralizer	0.12	0.08	0.07
Flow Control	0.08	0.03	0.04
Blender Stations	0.04	0.03	0.07
Blender Stations (North)	0.04	0.03	0.05
Blender Stations (South)	0.04	0.02	0.04
Feed Prep	0.06	0.05	0.11
Solvent Purification	0.11	0.09	0.09
Cascades (North)	0.03	-	0.05
Cascades (South)	0.03	-	0.05

<u>Areas</u>	<u>Average Concentrations (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Lunch Room	0.07	0.02	0.05
Welding Shop	-	0.07	-
Degreaser Area	-	0.08	-

Some areas in 9204-4 are rising in concentration due to shut-down operations.

Building 9201-2

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	1092	985	1129
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	36.5	45	26.5

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	63.5	55	73.5
0.10 - 0.19	33	37.5	24.6
0.20 - 0.29	3	5.0	1.3
0.30 - 0.39	0.5	1.6	0.1
0.40 - 0.60	0	0.9	0.4

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
MCTF	0.11	0.11	0.09
PTF	0.11	0.11	0.08
Colex Tray #1	0.12	0.11	0.06
Colex Tray #2	0.08	0.18	0.08
Colex Tray #3	0.06	0.13	0.12
Mechanical Shop	0.05	0.07	0.08
At Water Fountain 2nd. Floor	0.03	0.06	0.04

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Areas

	<u>Average Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Machine Shop X-10	0.04	0.03	0.04
Lunch Room	0.03	0.06	0.07
Electrical Shop	0.06	-	-
Instrument Shop	0.04	-	-
New Tray Area	-	0.12	0.04

Building 9201-5

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	9356	13,605	15,026
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	69	49.7	22.5

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	31	50.3	77.5
0.10 - 0.19	45.6	39.3	19.0
0.20 - 0.29	16	8.1	2.4
0.30 - 0.39	5	1.5	0.5
0.40 - 0.49	1.4	0.5	0.2
0.50 - 0.69	1.0	0.3	0.3
0.70 - 0.79			
0.80 - 0.89			
0.90 - 0.99			
> 1.00			

The percentage of samples above the MAC has been decreased to 22.5. Only 3.5% of the samples were above 0.20 mg/m³. The building average as determined from all samples for the past three months is as follows: Jan. 0.15 mg/m³, Feb. 0.10 mg/m³ and March 0.08 mg/m³. Although this average is below the MAC it should be remembered that there are still specific operations where the air concentrations are above the MAC. However the data presented above indicates that much has been accomplished during the past Quarter towards lowering the solvent vapor concentrations.

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The average concentrations for the various areas in mg/m^3 is as follows:

<u>Areas</u>		<u>Concentration (mg/m^3)</u>		
		<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Cascade #1	1st. Level	0.19	0.13	0.08
	2nd. Level	0.29	0.15	0.11
	3rd. Level	0.22	0.16	0.08
	4th. Level	0.13	0.08	0.05
Cascade #2	1st. Level	0.16	0.11	0.05
	2nd. Level	0.20	0.15	0.07
	3rd. Level	0.17	0.14	0.06
	4th. Level	0.10	0.08	0.04
Cascade #3	1st. Level	0.13	0.11	0.06
	2nd. Level	0.19	0.12	0.07
	3rd. Level	0.18	0.11	0.06
	4th. Level	0.14	0.07	0.04
Cascade #4	1st. Level	0.08	0.08	0.05
	2nd. Level	0.15	0.11	0.06
	3rd. Level	0.14	0.13	0.06
	4th. Level	0.12	0.08	0.04
Cascade #5	1st. Level	0.13	0.08	0.05
	2nd. Level	0.07	0.05	0.04
	3rd. Level	0.12	0.10	0.06
	4th. Level	0.08	0.05	0.04
Cascade #6	1st. Level	0.18	0.13	0.08
	2nd. Level	0.09	0.07	0.05
	3rd. Level	0.15	0.13	0.07
	4th. Level	0.09	0.07	0.04
Absorbers	#1	0.10	0.11	0.11
	1A	0.19	0.13	0.22
	2	0.11	0.10	0.08
	3	0.17	0.13	0.10
	4	0.12	0.11	0.12
	5	0.07	0.10	0.11
	6	0.08	0.12	0.10
Pump Area 1 and 2		0.22	0.14	0.10
Pump Area 3 and 4		0.21	0.13	0.08
Pump Area 5 and 6		0.18	0.12	0.07
Purified Feed Storage		0.24	0.12	0.08
1st. Stage Feed Prep		0.09	0.09	0.09
Instrument Shop		0.17	0.07	0.06
Buffalo Pump Repair		0.14	0.11	0.06
Chemical Recovery		0.09	0.09	0.06
Evaporator Room		0.25	0.09	0.06
Feed Mixing Area		0.21	0.14	0.06

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<u>Areas</u>	<u>Concentration (mg/m³)</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Extractors	0.06	0.10	0.05
Maintenance Shops	0.17	0.09	0.07
Lunch Room	0.22	0.12	0.07
Office Areas	0.12	0.06	0.03
Central Control Room	0.10	0.06	0.03

Building 9201-4

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Number of Samples taken	7224	8492	10,373
% of Samples equal to or greater than the MAC of 0.10 mg/m ³	72.5	41	9.7

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>		
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
< 0.10	27.5	59	90.3
0.10 - 0.19	45	34	8.7
0.20 - 0.29	14	4.6	0.75
0.30 - 0.39	6	1.6	0.10
0.40 - 0.49	4	0.5	0.15
0.50 - 0.59	1.6	3.5	
0.60 - 0.69	0.7		
0.70 - 0.79	0.3		
0.80 - 0.89	0.4		
0.90 - 0.99	0.2	0.35	
> 1.00	0.3		

Only 9.7% of the samples were above the MAC, while only 1% were above 0.20 mg/m³. The building average using all samples for January was 0.16 mg/m³, 0.10 mg/m³ for February and only 0.06 mg/m³ for March. It is quite apparent from the above that much has been accomplished during the past quarter towards lowering the air borne concentration of solvent vapor.

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The average concentrations in mg/m^3 for various areas is as follows:

<u>Areas</u>		<u>Concentration mg/m^3</u>		
		<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>
Cascade #7	1st. Level	0.08	0.05	0.04
	2nd. Level	0.17	0.08	0.05
	3rd. Level	0.12	0.07	0.06
	4th. Level	0.11	0.07	0.05
Cascade #8	1st. Level	0.09	0.08	0.04
	2nd. Level	0.17	0.11	0.04
	3rd. Level	0.17	0.09	0.05
	4th. Level	0.17	0.08	0.05
Cascade #9	1st. Level	0.10	0.06	0.06
	2nd. Level	0.19	0.11	0.08
	3rd. Level	0.14	0.07	0.05
	4th. Level	0.14	0.07	0.05
Cascade #10	1st. Level	0.12	0.07	0.05
	2nd. Level	0.25	0.09	0.07
	3rd. Level	0.20	0.08	0.06
	4th. Level	0.19	0.06	0.06
Absorber #7		0.13	0.10	0.04
	8	0.24	0.15	0.04
	9	0.32	0.11	0.05
	10	0.14	0.10	0.04
Pump Area #7		0.14	0.10	0.05
Pump Area #8		0.23	0.11	0.07
Pump Area #9		0.18	0.15	0.06
Pump Area #10		0.20	0.12	0.08
Hanging Gardens #7		0.20	0.13	0.07
Hanging Gardens #8		0.22	0.13	0.06
Hanging Gardens #9		0.26	0.16	0.06
Hanging Gardens #10		0.28	0.14	0.07
Evaporator		0.10	0.08	0.04
Feed Prep and Extract - 1st. Level		0.06	0.09	0.03
Feed Prep and 2nd. Level		0.23	0.12	0.05
Feed Prep and - 1st. Level		0.08	0.06	0.04
Feed Prep and - 2nd. Level		0.16	0.12	0.10
Feed Prep and - 3rd. Level		0.14	0.06	0.05
Maintenance Shop		0.17	0.18	0.09
Central Control Room		0.18	0.11	0.06
Office Areas		0.06	0.09	0.04
Lunch Room		0.09	0.13	0.07
Control Lab.				0.06

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Other Sampling

Ventilation duct sampling is being carried on in both 9201-5 and 9201-4. The Fan rooms have also been sampled to check for high incoming air.

The routine samples in Building 9204-2 around Bird baths etc., show no significant concentrations of solvent vapor.

Clean clothing at the laundry is still being checked on a random basis.

Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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INTER-COMPANY CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

A Division of Union Carbide and Carbon Corporation

To:

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Date: May 2, 1956

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Alloy Division, April 1956

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The following tables give the average concentrations of Solvent vapor in air for the various Alloy Division operations for the month of April.

Building 9204-4

Number of Samples taken 1924

% of Samples equal to or greater than the MAC of 0.10 mg/m³. 16

The Sample distribution pattern for 9204-4 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	84
0.10 - 0.19	12.5
0.20 - 0.40	3.5

<u>Areas</u>	<u>Average Concentration (mg/l)</u>
Bonnet Repair	0.04
Bonnet Storage	0.06
Demineralizer	0.09
Chemical Recovery	0.10
Solvent Purification	0.04
Flow Control	0.01
Blender Stations	0.05
Blender Stations - North	0.03
Blender Stations - South	0.02
Feed Prep	0.04
Cascades - North	0.06
Cascades - South	0.06
Lunch Room	0.06

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Building 9201-2

Number of Samples taken 977

% of Samples equal to or greater than
the MAC of 0.10 mg/m³. 15

The sample distribution pattern for 9201-2 is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	85
0.10 - 0.19	12
0.20 - 0.60	3

<u>Areas</u>	<u>Average Concentration (mg/m³)</u>
MCTF	0.07
PTF	0.07
Colex Tray #1	0.08
Colex Tray #2	0.06
Colex Tray #3	0.09
Mechanical Shop	0.06
At Water Fountain 2nd. Floor	0.02
Machine Shop X-10	0.03
Lunch Room	0.03

Building 9201-5

Number of Samples taken 17027

% of Samples equal to or greater than
the MAC of 0.10 mg/m³ 28

The percentage distribution of these samples in various concentration ranges is as follows:

<u>Concentration Range (mg/m³)</u>	<u>% of Samples</u>
< 0.10	72
0.10 - 0.19	22

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Concentration Range (mg/m³)

% of Samples

0.20 - 0.29

4

0.30 - 0.39

1

0.40 - 1.00

1

The average concentration mg/m³ for the various areas is as follows:

Cascades

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>
1st. Level	0.09	0.07	0.06	0.05	0.07	0.09
2nd. Level	0.12	0.09	0.08	0.08	0.05	0.07
3rd. Level	0.09	0.09	0.06	0.07	0.05	0.07
4th. Level	0.06	0.05	0.04	0.05	0.04	0.04

Absorbers

<u>No. 1</u>	<u>No. 1A</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>	<u>No. 5</u>	<u>No. 6</u>
0.12	0.24	0.10	0.10	0.10	0.10	0.08

Pump Areas

1 and 2

0.08

3 and 4

0.09

5 and 6

0.10

Areas

Average Concentration mg/m³

Purified Feed Storage

0.07

1st. Stage Feed Prep

0.08

Instrument Shop

0.06

Buffalo Pump Repair

0.05

Chemical Recovery

0.05

Extract

0.03

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Injection Pump Areas

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.05	0.05	0.06	0.05

Hanging Gardens

<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>
0.07	0.06	0.05	0.05

Areas

Average Concentration mg/m³

Evaporator Area	0.04
Feed Prep 1st. Level	0.04
Feed Prep 2nd. Level	0.04
Feed Prep 1st. Level	0.04
Feed Prep 2nd. Level	0.06
Feed Prep 3rd. Level	0.05
Maintenance Shops	0.07
Central Control Room	0.06
Office Areas	0.04
Lunch Room	0.06

From the foregoing tables concerning Buildings 9201-5 and 9201-4 the picture presented is essentially the same as for March. The building averages were reduced slightly in both cases from the March averages to 0.07 mg/m³ for 9201-5 and 0.04 mg/m³ for 9201-4.

Other routine sampling in Building 9204-2 showed no significant findings.

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

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June 12, 1956

Solvent Air Analysis for
Alloy Division, May 1956

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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during May.

Building 9204-4

There were 2041 samples obtained with 11% of these samples being equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.06 mg/m³ with no individual areas having an average equal to the MAC. There were no significant changes from the previous month.

Building 9201-2

There were 1126 samples obtained with 17% equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.05 mg/m³, and no individual area had an average equal to the MAC.

Building 9201-5

15,219 samples were obtained and 74% of these were below the MAC of 0.10 mg/m³. Of the samples ~~the~~ the MAC 21% fell between 0.10 and 0.19 mg/m³, 3.5% between 0.20 and 0.29 and 1% were equal to or greater than 0.30 mg/m³.

The building average was 0.08 mg/m³ with 10 of 42 areas sampled on a daily basis having an average concentration equal to or greater than the MAC. These areas with averages are as follows:

	mg/m ³
Cascade #1 2nd. Level	0.10
Absorber #1	0.13
Absorber #1A	0.17
" 2	0.12
" 3	0.12
" 4	0.12
" 5	0.12
" 6	0.12
" Pump Area 3&4	0.13
" " 5&6	0.10

These same areas were above the MAC last month with the exception of Absorber #6 and Pump Area 3 & 4.

There were no significant changes in the other areas from the previous months results.

Building 9201-4

11,199 samples were obtained and 95% of these were below the MAC of 0.10 mg/m³. The other 5% were in 0.10 - 0.19 concentration range with only an occasional sample in excess of 0.20 mg/m³. The building average concentration was 0.04 mg/m³ and none of the 37 areas sampled on a daily basis had average concentrations equal to the MAC.

Wind Tunnels

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The incoming air supply tunnels are being checked in both 9201-4 and 9201-5 on a routine basis to make certain that the incoming air is below the MAC.

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Building 9204-2

Routine checks in 9204-2 have shown no significant findings of Solvent Vapor.

The above building summaries indicate little or no change from the month of April except for slight increase in Building 9201-5.

Leo J. LaVance

Leo J. LaVance
Industrial Hygienist
Medical Department

LJL:emm

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-2-

The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during June.

Building 9204-4

Of the 1933 samples obtained 10% were equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.04 mg/m³ and no area had an average equal to the MAC.

Building 9201-2

1,255 samples were obtained and 20% of these were equal to or greater than the MAC of 0.10 mg/m³. The average building average was 0.06 mg/m³ and no individual area had an average equal to the MAC.

Building 9201-5

14,182 samples were obtained and 74% of these were below the MAC of 0.10 mg/m³. Of the samples greater than the MAC, 20% fell between 0.10 and 0.19 mg/m³; 4% between 0.20 and 0.29 and 2% were equal to or greater than 0.30 mg/m³.

The building average was 0.08 mg/m³ with 12 of 42 areas sampled on a daily basis having an average concentration equal to or greater than the MAC. These areas with averages are as follows.

<u>Area</u>	<u>Average Concentration (mg/m³)</u>
Cascade #5 - 3rd. Level	0.10
Cascade #6 - 1st. Level	0.12
Cascade #6 - 3rd. Level	0.14
Absorber #1	0.15
Absorber #1A	0.22
Absorber #2	0.12
Absorber #3	0.11
Absorber #4	0.10
Absorber #5	0.11
Pump 3 and 4	0.15
Lunch Room	0.10

Of the above areas all were above last month except the Lunch Room and Cascades #5 and #6. Cascade #1 - 2nd. Level and Pump #5 and #6 had a lower average than the previous month. The rest of the areas in 9201-5 remained essentially the same.

Building 9201-4

10,943 samples were obtained and 95.4% of these were below the MAC of 0.10 mg/m³. Of the remaining samples 4.1% were in the range of 0.10 - 0.19 mg/m³ and 0.5% were equal to or above 0.20 mg/m³.

The building average was 0.04 mg/m³ and none of 38 areas sampled on a daily basis had average concentrations equal to the MAC.

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Building 9204-2

No significant findings of solvent vapor were reported.

The Fan rooms and wind tunnels in both 9201-4 and 9201-5 are still being sampled to ensure no significant rise in solvent vapor in incoming air.

The above summaries indicate essentially the same picture as for the month of May.

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Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emmm

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box Y OAK RIDGE, TENN.

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September 5, 1956

ANSWERING LETTER DATE

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SUBJECT

Solvent Air Analysis for
Alloy Division, August, 1956

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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during August.

Building 9204-4

There were 1,948 samples obtained and 26% of these were equal to or greater than the MAC of 0.10 mg/m³. The average building concentration was 0.07 mg/m³ with two areas having an average equal to or greater than 0.10 mg/m³. These were Chemical Recovery with 0.10 mg/m³ and Solvent Purification with 0.19 mg/m³.

Building 9201-2

There were 970 samples taken with less than 1% equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.03 mg/m³.

Building 9201-5

There were 18,430 samples obtained in Building 9201-5. Of these, 70% were less than 0.10 mg/m³, 22.5% were from 0.10 - 0.19 mg/m³, 5% were from 0.20 - 0.29 mg/m³, 1.6% were from 0.30 - 0.39 and 0.9% were equal to or greater than 0.40 mg/m³.

The building average was 0.07 mg/m³ with 8 of 42 areas sampled on a daily basis having an average concentration equal to or greater than 0.10 mg/m³. These areas with averages are as follows:

<u>Area</u>	<u>Average Concentration (mg/m³)</u>
Cascade #6 1st. Level	0.13
Cascade #6 3rd. Level	0.10
Absorber #1	0.10
Absorber #1A	0.18
Absorber #4	0.10
Pump Area 1&2	0.12
Pump Area 3&4	0.17
Pump Area 5&6	0.11

Absorber 1A is somewhat lower than last month. The rest of the areas are essentially the same as the previous month.

Building 9201-4

Of the 11,416 samples obtained in Building 9201-4, 97% were below 0.10 mg/m³, 2.9% were between 0.10 and 0.19 mg/m³ and 0.1% were greater than 0.20 mg/m³.

The building average was 0.04 mg/m³ and none of 38 areas sampled on a daily basis had an average equal to or greater than the MAC.

The general picture for solvent areas shows a slight decrease in the air concentrations. Added absorber ventilation in 9201-5 seems to be helping in this respect.

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Leo J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

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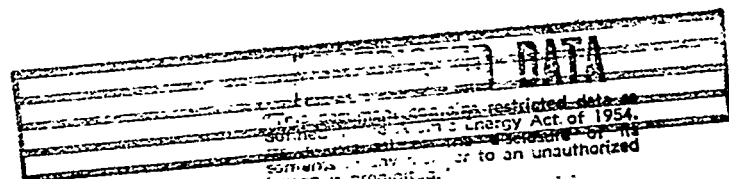
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Subject: Solvent Air Analysis
for Alloy Division
September 1956



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The following is a summary of the solvent vapor sample findings in the various areas of the Alloy Division during September.

Building 9204-4

There were 745 samples obtained and 8.2% of these exceeded the MAC of 0.10 mg/m³. No area had an average equal to or greater than the MAC.

Building 9201-2

There were 819 samples taken and 1.6% of these were equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.02 mg/m³.

Building 9201-5

There were 15,299 samples obtained in Building 9201-5. Of these, 78.9% were below 0.10 mg/m³, 16.9% were from 0.10 - 0.19 mg/m³, 2.5% were from 0.20 - 0.29 mg/m³, 0.8% were from 0.30 - 0.39 mg/m³, and 0.9% were greater than 0.40 mg/m³.

The building average was 0.06 mg/m³ and only 2 of 42 areas sampled on a daily basis had an average greater than the MAC. These were Absorber 1A with an average of 0.13 mg/m³ and Pump Area 1 and 2 with an average of 0.14 mg/m³.

Building 9201-5 is continuing to show a downward trend and the average of 0.06 is the lowest ever obtained for this area.

Building 9201-4

Of the 7,417 samples obtained in Building 9201-4, 98.4% were below the MAC of 0.10 mg/m³. There was 1.5% between 0.10 and 0.19 mg/m³ and only 0.1% greater than 0.20 mg/m³.

The building average was 0.03 mg/m³ and none of the 38 areas sampled on a daily basis had an average equal to or greater than the MAC.

Building 9204-X 2

Air sampling in Building 9204-4 continues to show no significant solvent vapor findings.

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:cmu

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Solvent Air Analysis
for October 1956

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The following is a summary of the solvent vapor sample findings in the various plant areas where solvent is used. In most areas there continues to be a downward trend in the atmospheric concentration of solvent vapor.

Building 9201-2

Of the 1,055 samples taken, 94.5% were less than the MAC of 0.10 mg/m³. The building average was 0.03 mg/m³ and no areas had an average equal to the MAC.

Building 9201-5

Of the 15,868 samples obtained, 83.4% were below the MAC of 0.10 mg/m³. 13.8% ranged from 0.10 - 0.19 mg/m³, 1.9% from 0.20 - 0.29 mg/m³ and the remaining 1% were equal to or greater than 0.30 mg/m³. This distribution continues to show improvement for 9201-5.

The building average was 0.07 mg/m³ with 6 areas having an average equal to or slightly greater than the MAC.

These areas are as follows:

Area	Average Concentration mg/m ³
1st. Level Cascade #1	0.13
1st. Level Cascade #2	0.16
1st. Level Cascade #3	0.10
1st. Level Cascade #4	0.10
1st. Level Cascade #5	0.11
1st. Level Cascade #6	0.12
Pump Area 1&2	0.16
Absorber 1A	0.15

These last two areas were the only ones above the MAC last month.

Building 9201-6

Of the 7,569 samples obtained, 94.8% were below the MAC of 0.10 mg/m³. 3.3% ranged from 0.10 - 0.19 mg/m³, 0.7% ranged from 0.20 - 0.29 mg/m³ and 0.9% were greater than 0.30 mg/m³.

The building average was 0.04 mg/m³ and none of the areas had an average equal to the MAC. Building 9201-6 continues to show low levels as in the past few months.

Building 9201-4

This building has been surveyed during dismantling operations and material and equipment checked for disposal. Atmospheric concentrations of solvent vapor have remained within reasonable limits except under conditions of burning and cutting with torches or when sizeable amounts of spillage have occurred.

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LaFrance
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Industrial Hygienist
Health Department

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Solvent Air Analysis
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The following is a summary of the solvent vapor sample findings in the various plant areas where solvent is used.

The downward trend in the atmospheric concentrations of solvent vapor continues in most areas.

Building 9201-2

There were 984 samples taken and only 2% were equal to or greater than the MAC of 0.10 mg/m³. The building average was 0.02 mg/m³, and no area had an average equal to the MAC.

Building 9201-5

There were 15,017 samples obtained in Building 9201-5 during November. Of these, 89.8% were below the MAC of 0.10 mg/m³. 8.7% ranged from 0.10 - 0.19 mg/m³, 1.2% from 0.20 - 0.29 mg/m³ and 0.3% from 0.30 - 0.49 mg/m³. This distribution continues to show improvement for 9201-5.

The building average was 0.05 mg/m³ with only two areas having an average in excess of the MAC. These areas were area 1&2 with an average of 0.12 mg/m³ and Absorber 1A with an average of 0.15 mg/m³. Absorber 1A shows no reduction over last months average.

Building 9201-4

There were 8,962 samples obtained in Building 9201-4 and 96.8% of these were below the MAC of 0.10 mg/m³. 3% ranged from 0.10 - 0.19 and 0.2% ranged from 0.20 - 0.39.

The building average was 0.04 mg/m³ with no areas in excess of the MAC. Building 9201-4 continues to show low levels as in the past few months.

Building 9204-4

Some sampling was continued in this area during completion of stripping operations.

The atmospheric concentrations of solvent continued to remain within reasonable limits as in October.

Miscellaneous Samples

Samples continued to be taken in the laundry and in checking laundered clothing.

Occasional high readings are obtained from freshly laundered coveralls.

Leo J. LaFrance
Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:emm

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Solvent Air Analysis
for December 1956

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 MAC	% Samples greater than 2 MAC	Building Average
9201-5	13,131	91.7	7.4	0.9	0.05 mg/m ³
9201-1	8,132	96.2	3.4	0.4	0.04 mg/m ³
9201-2	1,000	97.5	2.3	0.2	0.02 mg/m ³
9201-2	85	No Significant Findings			
Misc. *	372	86.0	12.0	2.0	

* Miscellaneous samples include changehouse checks, clean laundry, labs in other buildings, etc.

The solvent air sampling in Buildings 9201-1 and 9201-5 continues to show a downward trend. During December only one area, (Absorber 1A had an average of 0.11 mg/m³) was slightly greater than the MAC of 0.10 mg/m³. During the past two weeks however, the average of Absorber 1A has been slightly below the MAC.

L. I. LaFrance

L. I. LaFrance
Industrial Hygienist
Medical Department

LJL:cm

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Solvent Air Analysis
for January 1957

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

Building	# Samples Taken	% Samples less than MAC	% Samples 1 to 2 MAC	% Samples greater than 2 MAC	Bldg. Ave.
9201-5	15,726	96.3	3.7	0.0	0.04 mg/m
9201-4	11,104	92.1	6.9	1.0	0.04 mg/m
9201-2	1,122	93.7	6.3	0.0	0.04 mg/m
9201-3	85	No Significant Findings			
Misc. *	556	94.5	4.9	0.6	

* Miscellaneous samples include throughout checks, clean laundry, labs in other buildings, etc.

No individual area sampled in either Bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during January.

L. J. Lawrence
Industrial Hygienist
Medical Department

LJL:cm

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Solvent Air Analyses
 for February 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 x MAC</u>	<u>% Samples greater than 2 x MAC</u>	<u>Bldg. Ave.</u>
9201-5	13,601	96.6	1.1	0.3	0.01
9201-4	9,450	95.4	4.1	0.5	0.01
9201-2	1,018	93.2	6.2	-	0.03
9201-2	85	No Significant Findings			
Misc. *	312	95.5	4.3	5.2	

* Miscellaneous samples include storagehouse checks, clean laundry, labs in other buildings, etc.

No individual area in either Bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during February.

L. J. Lawrence
 Industrial Hygienist
 Medical Department

LJL:cmu

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J. C. Little File (T-12 AC)

Radon Air Analysis
For March 1957

RESTRICTED DATA

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The following table presents a summary of radon vapor sample findings in various plant areas for the month of March.

<u>Building</u>	<u># Samples Taken</u>	<u># Samples less than MAC</u>	<u># Samples equal to MAC</u>	<u># Samples greater than MAC</u>	<u>Rad. Ave.</u>
9201-5	31,103	97.2	2.1	0.1	0.2
9201-4	9,619	93.0	1.0	0.1	0.3
9201-3	1,000	90.0	1.0	0.1	0.3
9201-2	88	No Significant Findings			
→ Misc. *	603	67.3	31.4	2.0	

* Miscellaneous samples include steamroom stacks, clean laundry, labs in other buildings, etc.

No individual area in either Bldg. 9201-5 or 9201-4 had an average concentration equal to the MAC during March.

L. J. LaFrance

See also 1444

Industrial Hygiene
Radon Department

1444

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UNION CARBIDE NUCLEAR COMPANY
 A Division of Union Carbide and Carbon Corporation

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Date: May 2, 1957

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Solvent Air Analysis
for April 1957

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 J. C. Little File (Y-12 RC)

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 MAC	% Samples greater than 2 MAC	Bldg. Ave.
9201-5	13,973	98.7	2.2	0.1	0.04
9201-4	9,690	97.9	1.8	0.3	0.03
9201-2	1,066	97.8	2.2		0.03
9204-2	90	No Significant Findings			
Misc.*	306	81.0	14.0	5.0	
Sludge Burner)	162	63.0	20.0	17.0	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, etc.

No individual area in either 9201-5 or 9201-4 had an average concentration equal to the MAC during the month of April.

Significantly high samples have been found at various locations around the sludge burning equipment, even though this operation is being carried on out of doors.

L. J. LaFrance

Leo J. LaFrance
Industrial Hygienist
Medical Department

LJL:cm

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Subject: **Solvent Air Analysis
 for May 1957**

RESTRICTED DATA

This document contains restricted data as defined in the Atomic Energy Act of 1954. Its transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-3 X MAC</u>	<u>% Samples greater than 3 X MAC</u>	<u>Bldg. Avg.</u>
9201-5	11,010	98.1	1.5	.10	.01
9201-4	10,041	99.1	.80	.07	.03
9201-2	1,276	94.2	5.8		.04
9204-2	85				
Misc. *	510	93.2	2.9	3.9	
Sludge Burner	532	73.1	15.6	11.3	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, welding shop, etc.

No individual area in either 9201-5 or 9201-4 had an average concentration equal to the MAC during the month of May.

Significantly high samples have been found at various locations around the sludge burner equipment, however, with modification of the condensers and exhaust system it is hoped this situation will be corrected.

James F. Morehead

J. F. Morehead
 Industrial Hygiene Section
 Medical Department

JFM:cmz

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Subject: Solvent Air Analysis
for June 1957

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of June.

Building	# Samples taken	% Samples less than MAC	% Samples 1-4 x MAC	% Samples greater than 4 x MAC	Bldg. Ave.
9201-4	9,276	97.37	2.2	.1	.01
9201-5	12,582	98.89	1.1	.01	.03
9201-2	425	96.5	3.5		.01
9201-2	0				
Misc. *	198	86.9	9.1	4.0	
Sludge Burner	354	74.9	18.9	6.2	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, welding shop, etc.

During the month of June, no individual area in either 9201-4 or 9201-5 had an average concentration equal to the MAC.

Sample findings at various locations around the sludge burner equipment remained significantly above the MAC. Further modifications are being made to lower the vapor concentrations and have more efficient recovery of the solvent.

James F. Morehead

James F. Morehead
Industrial Hygiene Section
Medical Department

JFM:cm

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J. C. Little

Subject: Solvent Air Analysis
for July 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Building	# Samples Taken	% Samples less than MAC*	% Samples Y-3 & MAC	% Samples greater than 2 X MAC	Bldg. AVG.
9201-4	9,457	98.67	1.31	.01	.03
9201-5	13,277	99.79	.19	.00	.01
9201-2	1,006	94.43	5.57	-	.03
9201-2	85	100.00	.00	-	-
Misc. **	102	97.06	2.91	-	-
Sludge Burner	515	76.89	19.81	3.30	-

No individual area in either 9201-4 or 9201-5 had an average concentration equal to or greater than the MAC during the month of July.

The samples taken at various locations around the sludge burner equipment showed marked improvement over the previous month. However, sixty-three percent of the results greater than the MAC were received from the lockers located in the area. These high results will be eliminated with the continued good cooperation of the personnel involved.

* MAC - Maximum Allowable Concentration of mercury vapor is 0.10 mg/m³ of air.
** Miscellaneous samples include steamhouse and laundry.

James P. Harsham
Industrial Hygiene Section
Medical Department

FW:cm

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 x MAC	% Samples greater than 2 x MAC	Bldg. Avg.
9201-4	7,470	98.94	1.00	.05	.02
9201-5	11,017	99.69	.29	.02	.03
9201-2	517	100	.00	.02	.02
9204-2	85	100	.00	.00	.00
Misc. *	170	100	.00	.00	.00
Sludge Burner	801	76.40	13.35	10.24	

* Miscellaneous samples include changehouse, laundry, labs in other buildings, etc.

The solvent air averages in each building of the solvent production areas were well below the MAC during the month of August.

An increase in the samples 2X greater than the MAC at the Sludge Burner is primarily due to a blow-out of the furnace and the placing of contaminated equipment in the lockers. A letter of recommendations to help correct these situations and others has been written.

James J. Morehead

Industrial Hygiene Section
Medical Department

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Subject: Solvent Air Analysis
For September 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	5,509	97.92	2.08	.03	.03
9201-5	7,938	99.47	.53	.03	.03
9201-2	111	98.2	1.8	.03	.01
9201-2	85	100.0			.00
Misc. *	187	83.5	16.5	5.3	
Sludge					
Burner	610	68.8	31.2	6.6	

* Miscellaneous samples include storage tanks, laundry, Building 9201-4, Hydrogen Burner Building 9727-3, tanks in other buildings, etc.

The solvent production areas remained well below the MAC for the month of September.

Various locations in Building 9201-4 were found to contain high concentrations of solvent. A letter of recommendation was written concerning the necessary precautions to be followed by the contractor during alterations.

James F. Morehead

Industrial Hygiene Section
Health Department

JFM:amw

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Subject: Solvent Air Analysis
 for October 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	5,782	98.83	1.14	.03	.02
9201-5	8,616	99.44	.51	.05	.02
9201-2	138	81.88	18.12	-	.06
9204-2	85	100	-	-	-
Misc.*	362	93.38	3.31	3.31	-
Sludge					
Burner	524	83.4	14.1	2.5	-

* Miscellaneous samples include changehouse, laundry, Building 9204-4, Hydrogen Burner Building 9727-3, 9201-5 settling pit, labs in other buildings, etc.

The solvent production areas remained well below the MAC during the month of October. The vapor concentration in Building 9201-2 showed a significant increase over the previous month. Readings in the Sludge Burner Area indicated that vapor concentrations lower than those of previous months.

James J. Morehead
 Industrial Hygiene Section
 Medical Department

FW:emm

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UNION CARBIDE NUCLEAR COMPANY

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December 3, 1957

Originating Dept.

Answering letter date

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Solvent Air Analysis
for November 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

<u>Building</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>
9201-4	4,679	97.67	2.18	.15	.02
9201-5	7,331	98.53	1.28	.19	.03
9201-2	188	59.6	40.4	-	.09
9204-2	85	100.	-	-	100
Misc. * Sludge	354	87.0	9.9	3.1	-
Burner	680	90.6	7.6	1.8	

* Miscellaneous samples include changehouses, Building 9204-4, Pump Repair Shop, spill that resulted in Building 9201-4, etc.

The average for the solvent production areas remained well below the MAC during the month of November. The vapor concentration in Building 9201-2 showed a significant increase over the previous month as the result of temporary shut down of the exhaust for the basement area. Readings in the Sludge Burner Area indicated solvent vapor concentrations to be lower than those of previous months.

James F. Morehead, Jr.
Industrial Hygiene Section
Medical Department

FW:emm

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Subject: Solvent Air Analysis
for December 1957

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Building	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	4,446	99.10	.86	.04	.02
9201-5	6,430	98.43	1.18	.39	.02
9204-2	85	100	-	-	.00
9808 Pump	228	89.91	8.77	1.32	.03
Repair					
8110 Sludge	610	90.17	7.21	2.62	-
Burner					
Misc.*	34	100	-	-	-

* Miscellaneous samples include buildings 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of December. The pump repair shop (Bldg. 9808) has been included in the routine air analysis schedule. The results indicate the level of contamination to be relatively high at various times in this building.

James F. Morehead

James F. Morehead
Industrial Hygiene Section
Medical Department

FW:emma

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Subject: **Solvent Air Analysis
for January 1958**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

<u>Bldg.</u>	<u># Samples Taken</u>	<u>% Samples less than MAC</u>	<u>% Samples 1-2 X MAC</u>	<u>% Samples greater than 2 X MAC</u>	<u>Bldg. Avg.</u>
9201-4	5,544	97.87	1.70	.43	.02 167
9201-5	7,899	98.11	1.30	.58	.02 147
9201-2	125	100	0	0	0 0
9201-2	85	100	0	0	0 0
9808 Pump					
Repair	264	97.35	2.65	0	.02 7
8110 Sludge					
Burner	634	91.95	3.79	4.26	- 57
Misc. *	68	100	0	0	- 0

* Miscellaneous samples include buildings 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of January.

James F. Morehead

Industrial Hygiene Section
Medical Department

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Subject: Solvent Air Analysis
for February 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.	
9201-4	5,416	98.97	.81	.22	.02	56
9201-5	7,271	98.82	1.02	.16	.02	86
9201-2	42	92.86	2.38	4.76	.05	3
9204-2	85	100.00	0	0	.00	0
9808 Pump						
Repair	240	96.25	2.08	1.67	.03	9
8110 Sludge						
Burner	584	92.81	5.65	1.54	7.23	43
Misc. *	36	100.00	0	0	.03	0
Specials	10	100.00	0	0	-	

* Miscellaneous samples are readings taken in the pockets of clean coveralls and storage bins in 9723-18 and 9723-19.

The average for the solvent production areas remained well below the MAC during the month of February. The readings taken in building 9201-2 are higher than normal as result of the stripping operations. Periodic surveys are being made in the areas that are being stripped to measure the level of contamination which in time determines the precautions necessary to work safely from a health standpoint.

James F. Morehead

James F. Morehead
Industrial Hygiene Department

FW:cmh

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Subject: Solvent Air Analysis
for March 1958

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of March.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.	
9201-4	5,581	98.78	1.15	.07	.02	65
9201-5	7,823	99.83	.88	.09	.02	76
9201-2	125	72.00	17.60	10.40	.09	35
9204-2	85	100.00	0	0	.00	0
9808 Pump	252	92.86	6.35	.79	.04	18
Repair						
8110 Sludge	551	81.85	10.16	7.99	-	106
Burner						
Misc. *	34	88.24	11.76	0	.05	4
Specials	6	100.00	0	0	-	

* Miscellaneous samples are readings taken in the pockets of clean coveralls in buildings 9723-18 and 9723-19. The average for March indicates a .02 increase over that of February.

The average readings taken in the production areas are well below the MAC.

The stripping operations are in progress in the east half of building 9201-2. Respirators are being worn by personnel in the vicinity of torches and when dismantling duct work, etc. A mercury clean-up (UOHO) attempts to salvage all visible mercury as stripping proceeds. The exhaust fan for the basement was disconnected around 3-21-58 without Industrial Hygiene Department approval. High results were found on the first level after this action. A request was made to W. C. Moyers to put this exhaust back in operation.

The office, rest room and lunch room at the sludge burner continue to be a problem. Results indicate that 51.15 of the samples taken in these rooms were at the MAC or greater.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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Subject: Solvent Air Analysis
for April 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. AVG.
9201-4	3,877	99.05	.93	.02	.02
9201-5	5,371	99.05	.80	.15	.03
9201-2	457	71.11	22.98	5.91	.08
9201-2	85	100.00	.00	.00	.00
9808 Pump	216	93.52	6.48	.00	.04
Repair					
8110 Sludge	619	88.53	9.69	1.78	-
Burner					
Misc. *	36	97.22	2.78	.00	.04

* Miscellaneous samples are readings taken in the pockets of clean coveralls in building 9723-18 and 9723-19. The average for April indicates a .01 mg per cubic meter decrease from March.

The average readings taken in the production areas are well below the MAC. Effective 4-12-58 the plan for sampling the vapor concentrations in 9201-4 and 9201-5 less frequently was initiated. This plan provides for sampling one half of the areas in each building every day which will give complete coverage every two days.

The Sludge Burner results indicate an improvement in per cent of samples greater than two times the MAC.

The stripping operation in 9201-2 is in the final stages. Respirators were worn by personnel working in the areas being stripped where the mercury vapor level was high at various times due to cutting with torches and spillage of mercury from pipes, etc.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

FW:emm

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UNION CARBIDE NUCLEAR COMPANY

Division of Union Carbide Corporation

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Plant: Y-12

Date: June 4, 1958

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Subject: Solvent Air Analysis
for May 1958

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,828	96.50	3.42	0.28	.03
9201-5	3,861	99.40	0.60	0.00	.02
9201-2	258	60.46	34.22	21.32	.12
(Stripping)					
9201-2	85	100.00	.00	.00	.00
9808	252	90.87	8.33	.80	.05
(Pump Repair)					
81-10	589	71.48	16.30	12.22	-
(Sludge Burner)					
9723-18 (Cover- 17 all Pockets)		70.59	17.65	11.76	.08
9723-19 (Cover- 17 all Pockets)		94.12	5.88	.00	.04
9727-3 (Hydro- 11 gen Burner)		100.00	.00	.00	.00

The average readings taken in the production areas are well below the MAC. The number of readings 1-2 X MAC increased in building 9201-4 over the previous month.

Readings taken in 9201-2 were higher than for the previous month. The majority of the high readings were received when the ceiling over the rubber shop and adjacent areas was being removed. The ceiling was highly contaminated with solvent. The stripping operation in the East end has been completed.

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The Sludge Burner, Bldg. 81-10, readings show a decided increase over those for the previous month. The furnace was being overhauled which resulted in higher readings than usual.

Coverall pockets of clothing in the bins of building 9723-18 have readings that indicate an increase over the previous month. Those in building 9723-19 remained at about the same level of contamination. The results for these two areas have previously been included in the Miscellaneous column.

James F. Morehead, Jr.

J. F. Morehead
Industrial Hygiene Department

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of June.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,893	95.23	4.77	.00	.04
9201-5	3,872	98.69	1.31	.00	.02
9201-2					
(Stripping)	51	49.02	50.98	17.65	.12
9204-2	85	100.00	.00	.00	.00
9808					
(Pump Repair)	259	89.19	10.82	.39	.04
Beta 4					
(Extract)	99	71.72	18.18	10.10	.09
81-10					
(Sludge Burner)	589	71.48	20.54	7.98	-
9727-3 (Hydro-					
gen Burner)	7	100.00	.00	.00	.01
9723-18 (Cover-					
all Pockets)	17	82.35	17.65	.00	.05
9723-19 (Cover-					
all Pockets)	17	82.35	17.65	5.88	.05

The average readings taken in the stripping area are well below the MAC. The building average for 9201-4 continues to show a gradual increase over the previous month.

Readings taken in 9201-2 continued to be high. The entire track floor level and the east end of the lower level have been stripped. Solvent hazard for this building will continue to be potential as long as the high level of contamination exists in the basement area.

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Subject: **Solvent Air Analysis for July 1958**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Bldg.	# Samples Taken	3 Samples less than MAC	1 Sample 1-2 X MAC	1 Sample greater than 2 X MAC	Bldg. AVG.	
9201-4	4,135	88.22	10.93	.85	.05	4.87
9201-5	4,008	99.83	1.02	.15	.02	47
9201-2	15	73.33	-	26.67	.12	4
9204-2	85	100.00	.00	.00	.00	-
9808	164	26.34	3.66	-	.03	6
Pump Repair						
Beta 4	265	71.34	17.36	8.30	.08	6.8
Extract						
81-10	785	19.35	28.28	22.17	-	3%
Sludge Burner						
9727-3 Hydro-	11	100.00	.00	.00	.02	-
gan Burner						
9723-18 Cover-	17	61.72	23.53	11.76	.10	6
all Pockets						
9723-19 Cover-	17	91.12	.00	5.88	.06	1
all Pockets						
Miscellaneous	80	10.00	31.25	28.75	-	5

The average readings taken in the production areas are well below the MAC. The building average for 9201-4 continues to show a gradual increase over the previous month. Repairs have been completed and an intensive clean-up program which was showing good results near the end of the month.

The readings for building 9201-2 were taken in the basement (ground) and indicate the potential solvent hazard exists.

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The sludge burner, bldg. 81-10 had high readings for the month. Emphasis on clean-up, etc., is being practiced to eliminate these high results.

The clean clothing in 9723-18 gave readings that were considerable higher than those in 9723-19 and each had an average greater than the previous month.

The miscellaneous samples were taken on either side of the road SW of building 81-10, in front of buildings 9720-9 and 9720-10. A more extensive survey program was conducted under the supervision of Mr. J. S. Reese.

James F. Morehead, Jr.

James F. Morehead

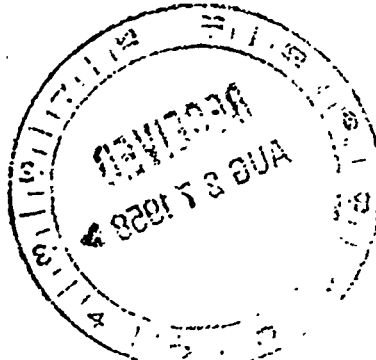
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Subject: Solvent Air Analysis
for August 1958

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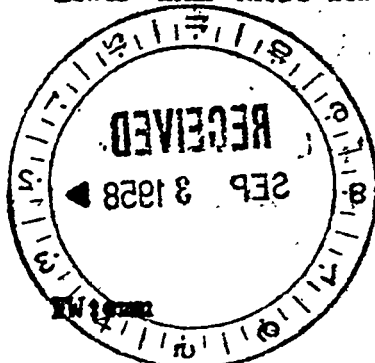
The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. AVG.
9201-4	2,916	99.01	.89	.10	.03
9201-5	4,002	98.80	1.20	.10	.02
9201-2	85	100.00	.00	.00	.00
9808	161	100.00	.00	.00	.02
Beta 4 Extract	132	86.37	12.36	1.67	.05
81-10	681	51.42	27.61	17.77	.11
9723-3	10	20.00	.00	10.00	.03
9723-18 (Cover all Pockets)	17	94.12	5.88	.00	.05
9723-19 (Cover all Pockets)	17	94.12	5.88	.00	.05

The average readings taken in the production areas are well below the MAC. The intensive clean-up program conducted in 9201-4 has been very effective in lowering the building average.

The readings at the sludge burner (81-10) show a little improvement over the previous month.

Readings taken in the pockets of clean materials in 9723-18 and 9723-19 were lower than those for the previous month.



James F. Morehead
James F. Morehead
Industrial Hygiene Dept.

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Subject: Solvent Air Analysis

September 1958

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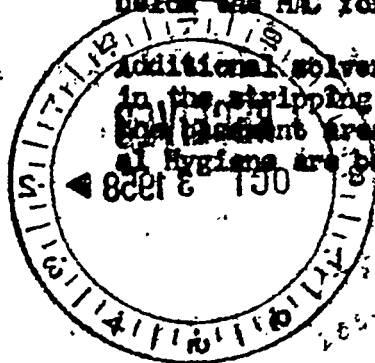
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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

Bldg.	# Samples Taken	# Samples less than MAC	# Samples 1-2 MAC	# Samples greater than 2 MAC	Bldg. Avg.
9201-1	3,028	98.98	1.02	0.00	.03
9201-5	3,812	98.93	1.07	0.00	.02
9201-2	85	100.00	0.00	0.00	.00
9808	201	99.02	0.98	0.00	.01
Beta 4					
Extract	180	81.67	18.33	0.00	.06
81-10	651	76.19	23.81	0.00	.05
9727-3	10	80.00	20.00	0.00	.02
9723-18 (Cover-all Pockets)	17	88.24	11.76	0.00	.05
9723-19 (Cover-all Pockets)	17	100.00	0.00	0.00	.03
9201-2					
Basement	9	11.11	88.89	0.00	.20
9201-1					
West-end	32	71.88	28.12	0.00	.05

The average for all production areas for the month of September remained below the MAC for solvent.

Additional solvent surveys were made by the H. K. Ferguson Company in the stripping of the west end of Beta 4 and electrical installation in the basement area of 9201-2. The previous recommendations made by Industrial Hygiene are being followed in these operations.



James F. Morehead, Jr.

Industrial Hygiene Department

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Subject: Solvent Air Analysis
for October 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

	Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
3159	9201-4	3,189	99.06	.85	.09	.02
4161	9201-5	4,236	98.23	1.72	.05	.02
85	9204-2	85	100.00	.00	.00	.00
242	9808	253	95.65	3.95	.40	.04
	Beta 4					
195	Extract	216	90.28	8.33	1.39	.05
566	81-10	713	79.39	12.76	7.85	-
10	9727-3	10	100.00	.00	.00	.00
14	9723-18 (Cover-					
	all Pockets)	14	100.00	.00	.00	.03
14	9723-19 (Cover-					
	all Pockets)	14	100.00	.00	.00	.03
8446	Misc. *	26	88.46	.00	11.54	-

* Miscellaneous samples include readings taken in Buildings 9202, 9404-9 and 9995.

The average readings taken in the production areas were below the Maximum Acceptable Concentration of 0.1 milligrams of vapor per cubic meter of air sampled.

James F. Morehead, Jr.

Mr. James F. Morehead
Industrial Hygiene Department

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for November 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,659	98.80	1.05	.15	.03
3392 9201-5	3,473	97.67	1.98	.35	.03
82 9204-2	85	100.00	.00	.00	.00
219 9808	228	96.05	3.51	.44	.04
Beta 4					
132 Extract	144	91.67	8.33	.00	.05
325 81-10	572	65.56	22.73	11.71	.05
8 9727-3	10	80.00	20.00	.00	.03
9723-18 (Cover-all Pockets)	14	71.43	21.43	7.14	.06
10 9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.05
14 Misc. *	23	86.96	4.35	8.70	.05
6862					

* Miscellaneous samples include readings taken in Buildings 9404-9 and 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of vapor per cubic meter of air sampled.

Readings taken in the pockets of clean coveralls in 9723-18 and 9723-19 were higher than those for the previous month.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

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 for December 1958

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	3,012	99.24	.70	.06	.02
9201-5	4,014	95.84	3.04	1.12	.03
9204-2	85	100.00	.00	.00	.00
9808	263	91.26	7.22	1.52	.04
B4 Extract	24	100.00	.00	.00	.02
81-10	681	87.37	8.22	4.41	—
9727-3	10	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.03
9723-19 (Cover-all Pockets)	17	100.00	.00	.00	.03
9404-9	12	100.00	.00	.00	.00
Misc.*	38	60.71	17.87	21.42	—

* Miscellaneous samples include readings taken in buildings 9995, 9204-4 (stripping) and 9201-2 (basement).

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

The high readings shown in the Miscellaneous column were received during the stripping of pipes, etc., in the basement of building 9201-2. Respirators were worn by personnel performing the cutting and removal of pipes.

James F. Morehead, Jr.

James F. Morehead
 Industrial Hygiene Department

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for January 1959

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,989	97.63	2.14	.23	.03
9201-5	3,853	88.86	9.06	2.08	.04 429
9204-2	85	100.00	.00	.00	.00
9808	252	91.27	7.54	1.19	.04 22
B4 Extract	12	100.00	.00	.00	.02
81-10*	341	95.31	2.64	2.05	.04 16
9727-3	22	90.91	.00	9.09	.04 2
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.02
9723-19 (Cover-all Pockets)	17	100.00	.00	.00	.02 340
9404-9	12	100.00	.00	.00	.01
Misc.**	10	100.00	.00	.00	.00

* Sampling was discontinued after 1-16-59 due to shut-down of operations.

** Includes samples taken in building 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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Plant: I-12

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for February 1959

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of February.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Bldg. Avg.
9201-4	2,717	97.24	2.43	.33	.03 25
9201-5	3,490	92.87	5.93	1.20	.03 2.19
9204-2	93	97.85	.00	2.15	.01 2
9808	228	93.42	6.58	.00	.03 15
B4 Extract*	12	100.00	.00	.00	.01
9727-3	22	100.00	.00	.00	.01
9723-18 (Cover-all Pockets)	17	100.00	.00	.00	.02
9723-19 (Cover-all Pockets)	14	100.00	.00	.00	.02
9404-9	205	94.63	4.39	.98	.03 11
Misc.**	398	96.48	2.76	.76	.03 352

* Beta 4 Extract area has been temporarily shut down.

** Includes samples taken for special study for buildings 9723-18 and 9723-19, and readings for 9201-2, 9401-3 and 9995.

The average readings taken in the production areas were well below the Maximum Acceptable Concentration of 0.1 milligrams of solvent vapor per cubic meter of air sampled.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

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for March 1959**RESTRICTED DATA**

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of March.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,730	96.56	2.93	.51	.02
9201-5 (Pre-shut-down)	1,824	95.12	3.89	.99	.03
9201-5 (Shut-down)	2,003	72.94	20.87	6.19	.05
9204-2	0	-	-	-	-
9808	252	98.02	1.98	.00	.03
B4 Extract	180	90.55	7.78	1.67	.05
81-10	310	87.74	6.45	5.81	-
9723-18 (General air & Lockers)	170	97.06	1.76	1.18	.01
9723-19 (General air & Lockers)	170	97.65	1.76	.59	.01
9404-9	252	96.03	2.78	1.19	.03
Misc.*	367	76.57	17.44	5.99	-

*Miscellaneous includes readings taken in 9201-2 during excavation operations in the basement, and in the line 5 Bird Bath Area of 9204-2.

The average of vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of .1 mg per cubic meter of air. Building 9201-5 went out of production 3-13-59 and has gone into a shut-down operation that caused an increase of the vapor level in specific areas.

Readings were taken at 81-10 beginning 3-17-59 after start-up of the recovery program.

J. F. Morehead
 James F. Morehead
 Industrial Hygiene Dept.

PW:emm

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-2-

The Sludge Burner, Bldg. 81-10 has not been in production during the month. The high readings were received during dismantling and preparing to re-brick the furnace.

The Beta 4 Extract Building was put in use as a filter cleaning and recovery area for solvent and alloy. The present readings indicate a decrease for the level of solvent vapor contamination from those received during the earlier start-up. However, many readings continue to be greater than the MAC.

James F. Morehead, Jr.

James F. Morehead
Industrial Hygiene Department

FW:emmm

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INTER-COMPANY CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

Division of Union Carbide Corporation

To: List

Plant: Y-12

Date: May 5, 1959

Subject: Solvent Air Analysis
for April 1959

Copies To: J. P. Murray W. Cameron
G. A. Strasser J. W. Ebert
H. T. Kite C. B. Newman
W. E. Heckert J. C. Ezell
L. E. Burkhardt D. H. Rader
R. A. Walker G. W. Flack
J. S. Reece L. W. Bagwell
Neal Dow File

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of April.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,958	96.55	2.94	.51	.03
9201-5					
(Shut-down)	2,208	75.72	21.51	2.77	.05
9204-2	85	100.00	.00	.00	.00
9808	204	97.06	2.45	.49	.03
B4 Extract	264	91.29	8.33	.38	.05
81-10	682	79.03	11.73	9.24	-
9404-9	264	99.24	.38	.38	.02
9723-18					
(General Air and Lockers)	170	96.47	1.18	2.35	.02
9723-19					
(General Air and Lockers)	170	97.06	1.18	1.76	.02
9723-18					
(Clothing)	16	100.00	.00	.00	.02
9723-19					
(Clothing)	12	83.33	8.33	8.33	.05
Hydrogen					
Burner	10	100.00	.00	.00	.02
Misc.*	386	66.58	29.53	3.89	-

* Miscellaneous includes readings taken in building 9201-2 during excavation operations in the basement, and in building 9995.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

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INTER-COMPANY CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

Division of Union Carbide Corporation

To: LHM

Plant: Y-12

Date: June 3, 1959

Subject: Solvent Air Analysis
for May 1959

Copies To:

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J. W. Ebert

G. V. Strasser

C. B. Newman

H. C. Kline

J. C. Exell

W. A. Rogers

D. H. Raden

L. E. Buckhart

G. W. Flack

R. E. Walker

L. W. Bagwell

N. E. Davis

File ✓

W. E. Carter

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of May.

Buildg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-1	2,539	94.96	4.65	.39	.03
9201-2	1,653	79.80	13.61	6.59	.07
(8m down)					
9201-4	85	100.00	.00	.00	.00
9801-1	240	94.58	5.00	.42	.03
81-15 (General)	240	96.25	2.08	1.67	.04
81-16	620	74.03	12.74	13.23	.04
9101-3	240	98.33	1.25	.42	.01
9723-18 (Cover-air pockets)	16	100.00	.00	.00	.02
9723-18 (Cover-air pockets)	16	100.00	.00	.00	.02
9723-18 (General Air and lockers)	106	97.17	1.89	.94	.03
9723-19 (General Air and lockers)	136	96.32	1.47	2.21	.03
Hydrogen Burner	10	100.00	.00	.00	.01
Miscellaneous	226	68.58	22.57	8.85	.04

* Miscellaneous includes readings taken in Building 9201-2 during excavation operations in the basement and building 9204-3.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air. The readings in building 9201-5 are higher than normal due to spills, reduction in air movement, etc., and are expected to remain at the average level of approximately 0.1 mg per cubic meter of air during stand-by.

J. F. Monahan

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CARBIDE

INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

• POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)
Company
Location

List

Date

July 6, 1959

Originating Dept.

Industrial Hygiene

Answering letter date

Copy to

J. P. Murray J. W. Ebert
G. A. Strasser C. B. Newman
H. T. Kite J. C. Ezell
W. E. Heckert D. H. Rader
L. E. Burkhart G. W. Flack
R. A. Walker L. W. Bagwell
Neal Dow File ✓
W. Cameron

Subject

Solvent Air Analysis
for June 1959

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defined in the Atomic Energy Act of 1954.
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person is prohibited."

The following table presents a summary of solvent vapor sample findings in
various plant areas for the month of June.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,512	96.42	2.83	.75	.03
9201-5	745	86.98	11.14	1.88	.04
9204-2	36	100.00	.00	.00	.00
9808	120	99.17	.83	.00	.03
B4 Extract	121	95.04	4.96	.00	.03
81-10	669	77.58	11.96	10.46	-
9404-9	264	100.00	.00	.00	.01
9723-18 (Cover- all Pockets)	16	87.50	.00	12.50	.04
9723-19 (Cover- all Pockets)	14	100.00	.00	.00	.00
9723-18 (General Air and Lockers)	104	94.23	4.81	.96	.02
9723-19 (General Air and Lockers)	127	99.21	.79	.00	.01
Hydrogen Burner	10	100.00	.00	.00	.01
9201-2	68	39.71	41.18	19.11	-

The average vapor readings taken in the production areas continue to be below
the Maximum Acceptable Concentration of 0.1 mg per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Dept.

FW:emh

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**UNION
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INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)
Company
Location

List ✓

Date

August 17, 1958/9

Originating Dept.

Industrial Hygiene

Answering letter date

Copy to

J. P. Murray
G. A. Strasser
H. T. Kite
W. E. Heckert
L. E. Burkhardt
R. A. Walker
Neal Dow
W. Cameron

J. W. Ebert
C. B. Newman
J. C. Ezell
D. H. Rader
G. W. Flack
L. W. Bagwell
File

Subject

Solvent Air Analysis
for July 1958/9

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of July.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,504	96.28	3.12	.60	.03
9201-5	695	96.53	2.92	.55	.04
9204-2	51	100.00	.00	.00	.00
9808	108	98.16	.92	.92	.02
B4 Extract	48	100.00	.00	.00	.03
81-10	682	80.65	10.41	8.94	-
9404-9	108	99.08	.92	.00	.01
9723-18 (Coverall Pockets)	18	100.00	.00	.00	.01
9723-19 (Coverall Pockets)	14	100.00	.00	.00	.01
9723-18 (General Air and Lockers)	130	100.00	.00	.00	.01
9723-19 (General Air and Lockers)	125	100.00	.00	.00	.00
9727-3	10	100.00	.00	.00	.00
9201-2 (Basement)	70	82.86	14.28	2.86	.06

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

for Fred Williams
James F. Morehead
Industrial Hygiene Department

FW:emh

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UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List Date September 3, 1959
Company Originating Dept. Industrial Hygiene
Location Answering letter date
Copy to J. P. Murray J. W. Ebert Subject Solvent Air Analysis
G. A. Strasser C. B. Newman for August 1959
H. T. Kite J. C. Ezell
W. E. Heckert D. H. Rader
L. E. Burkhart G. W. Flack
R. A. Walker L. W. Bagwell
Neal Dow File ✓
W. Cameron

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of August.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,320	94.57	126 4.05	1.38	.04
9201-5	691	92.33	53 6.51	1.16	.05
9204-2	51	100.00	.00	.00	.00
9808	108	88.89	12 .93	10.18	.04
B4 Extract	52	96.15	2 3.85	.00	.02
81-10	651	78.35	141 6.14	15.51	-
9404-9	96	100.00	.00	.00	.00
9723-18 (Coverall Pockets)	16	100.00	.00	.00	.01
9723-19 (Coverall Pockets)	13	100.00	.00	.00	.01
9723-18 (General Air and Lockers)	95	96.84	3 2.11	1.05	.01
9723-19 (General Air and Lockers)	92	100.00	.00	.00	.00
9201-2 (Basement)	49	83.67	1 14.29	2.04	.04
9727-3	10	100.00	.00	.00	.00

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

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INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)
Company
Location

List

Date

October 5, 1959

Originating Dept.

Industrial Hygiene

Answering letter date

Copy to

J. P. Murray J. W. Ebert
G. A. Strasser C. B. Newman
H. T. Kite D. H. Rader
W. E. Heckert G. W. Flack
L. E. Burkhart L. W. Bagwell
R. A. Walker File ✓
Neal Dow

Subject

Solvent Air Analysis
for September 1959

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of September.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,278	97.28	2.24	.48	.03
9201-5	770	95.84	3.51	.65	.04
9808	120	99.17	.83	.00	.02 (0.5)
B4 Extract	53	96.23	3.77	.00	.02
81-10	641	81.12	7.96	10.92	-
9404-9	84	100.00	.00	.00	.02 (0.1)
9723-18 (General Air and Lockers)	34	100.00	.00	.00	.00
9723-19 (General Air and Lockers)	34	100.00	.00	.00	.01
9201-2	47	48.94	51.06	.00	.08
9727-3	10	100.00	.00	.00	.02

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:emh

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INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List
Company
LocationDate November 3, 1959
Originating Dept. Industrial Hygiene

Answering letter date

Copy to J. P. Murray J. W. Ebert
G. A. Strasser C. B. Newman
H. T. Kite D. H. Rader
W. E. Heckert G. W. Flack
L. E. Burkhart L. W. Bagwell
R. A. Walker File ✓
Neal DowSubject Solvent Air Analysis
for October 1959

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of October.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,258	98.67	1.33	.00	.02
9201-5	639	96.09	3.91	.78	.03
9808	180	100.00	.00	.00	.02
B4 Extract	22	77.27	22.73	4.55	.06
81-10	609	83.58	16.42	9.20	-
9404-9	48	100.00	.00	.00	.01
9201-2*	47	82.98	17.02	10.64	.05

* Taken in the basement and in the vicinity of the MG area.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:emh

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UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)
Company
Location

List

Date

December 1, 1959

Originating Dept.

Industrial Hygiene

Answering letter date

Copy to

J. P. Murray J. W. Ebert
G. A. Strasser C. B. Newman
H. T. Kite D. H. Rader
W. E. Heckert G. W. Flack
L. E. Burkhardt L. W. Bagwell
R. A. Walker File ✓
Neal Dow

Subject

Solvent Air Analysis
for November 1959

RESTRICTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of November.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples greater than 2 X MAC	Avg.
9201-4	2,173	97.65	51	2.26	.09
9201-5	644	95.81	27	3.88	.31
9808	180	98.89	2	1.11	.00
81-10	551	90.92	50	7.08	2.00
9404-9	48	100.00		.00	.00
9727-3	10	100.00		.00	.00
9201-2 *	11	90.91	1	9.09	.00
Misc. **	12	75.00	3	8.33	16.67

* Readings were in the vicinity of the MG area in the basement.

** Taken in the Davis Guage repair room, building 9737.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:emh

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INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name) List
Company
Location

Date January 4, 1960
Originating Dept. Industrial Hygiene

Answering letter date

Copy to J. P. Murray J. W. Ebert Subject
G. A. Strasser G. B. Newman Solvent Air Analysis
H. T. Kite D. H. Rader for December 1959
W. E. Heekert G. W. Flack
L. E. Burkhardt L. W. Bagwell
R. A. Walker File
Neal Dow

SELECTED DATA

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The following table presents a summary of solvent vapor sample findings in various plant areas for the month of December.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples Greater Than 2 X MAC	Avg.
9201-4	2,537	96.22	96	3.47	.02
9201-5	693	92.16	160	23.09	.03
9808	180	98.89	2	1.11	.03
81-10	578	90.66	54	4.67	--
9404-9	36	100.00		.00	.00

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

J. F. Morehead
James F. Morehead
Industrial Hygiene Department

FW:jfw

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INTERNAL CORRESPONDENCE

UNION CARBIDE NUCLEAR COMPANY

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE

To (Name)	L. W. Bagwell	J. D. McLendon	Date	February 1, 1960
Company	L. E. Burkhardt	J. P. Murray		
Location	Neal Dow	C. B. Newman	Originating Dept.	Industrial Hygiene
	J. W. Ebert	D. H. Rader		
	G. W. Flack	G. A. Strasser	Answering letter date	
	W. E. Heckert	R. A. Walker		
Copy to	H. T. Kite	File	Subject	Solvent Air Analysis for January 1960

The following table presents a summary of solvent vapor sample findings in various plant areas for the month of January.

Bldg.	# Samples Taken	% Samples less than MAC	% Samples 1-2 X MAC	% Samples Greater Than 2 X MAC	Avg.
9201-4	1,955	98.31	1.33	.36	.02
9201-5	797	92.60	5.65	1.75	.04
9201-5*	693	97.69	2.31	.00	.03
9808	192	99.48	.52	.00	.02
81-10	580	92.24	4.14	3.62	—
9404-9	48	100.00	.00	.00	.01
9727-3	25	100.00	.00	.00	.01
Misc.**	42	71.43	7.14	21.43	—

*Correction on December report.

**Miscellaneous samples were taken in buildings 9204-4, 9201-2, 9202, 9995, and 9737.

The average vapor readings taken in the production areas continue to be below the Maximum Acceptable Concentration of 0.1 milligrams per cubic meter of air.

RESTRICTED DATA

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J. F. Morehead
James F. Morehead
Industrial Hygiene Department

jfw

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OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

Document No. Y/Hg-0173 Author's Telephone No. _____ Acct. No. _____ Date of Request _____
Unclassified Title: M-836 'Air Conc. in Stacks, 9204-4' of Solvent 1 October 1953
Notes, Health Physics Analyses, Plots

Author(s) Unknown
TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____
☒ Other (Specify): Plot(s), results, etc. of 9204-4 stack sampling; 12 pages
Document will be published in proceedings ☐ No ☐ Yes
Document will be distributed at meeting ☐ No ☐ Yes
Document has patent or invention significance ☐ No ☐ Yes (Identify) 1 document
Document has been previously released ☒ No ☐ Yes (Reference) _____

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TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)
Title(s): Unclassified Abstract: _____
DOCUMENT: Level Unclassified Category _____
H.F. Crigh 20 April 1994
Signature Date
DOCUMENT REQUEST APPROVED (Division or Department)
R.R. Fraser 4/15/94
Signature Date

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R.R. Fraser 5/2/94
Technical Information Office Date

Conditions/Remarks: _____

~ Oct 1953

Sample #	Location	Time Min	Rate Cfm	Total Vol cu ft	mg / ft ³	mg / ft ³	
1	North Plant	40	1	40	5.5	1.37	
2	Blank	—	—	—	—	—	
3	North Plant	40	1	40	5.5	1.37	
4	"	40	1	40	5.0	1.24	
5	"	40	1	40	6.0	1.5	
6	"	40	1	40	8.75	2.18	
7	"	40	1	40	8.05	2.02	
8	Blank	—	—	—	—	—	
9	North Plant	40	1	40	6.0	1.5	
10	"	40	1	40	6.5	1.62	
11	South Plant	40	1	40	8.75	2.18	
12	Blank	—	—	—	—	—	
13	South Plant	40	1	40	8.75	2.18	
14	"	40	1	40	8.45	2.1	
15	"	40	1	40	8.45	2.1	
16	"	40	1	40	7.75	1.93	
17	"	40	1	40	6.68	1.66	
18	Blank	—	—	—	—	—	
19	South Plant	80	1	80	12.95	1.62	
20	"	40	1	40	7.25	1.81	

APPROVED FOR PUBLIC RELEASE	5/3/54
Technical Information Office	Date

Average Concentration mg/ft³ 1.8
 grams/sec/hr For both Plants 16.04
 160g / 24hr = 6.67 g/hr
 6.67 g/hr x 24 hr = 160 g/day
 160 g/day = 3.46 #/day

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. 1190-119-

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator Baumann Date 10/13/53
Address HP Phone 78211
Acc'ting Chg. _____

Sample Identification

Tests Required

Report in Term of mgPrecision Required 21.5 Priority 1Total No. of Samples 5

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

NoneApproved for Analysis JBYLaboratory Priority A

Laboratory No.

Originator's Identification

Results

1190

16

7.75 mg / Sample

1191

17

6.675 mg / Sample

1192

18

Blank

1193

19

12.950 mg / Sample

1194

20

7.25 mg / Sample

Analyst J. K. Housch Date Completed 10-20-53 Approved by _____

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. 1175-117

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator <u>Brunman</u> Date <u>10-5-53</u>	Sample Identification <u>1-5</u>
Address <u>HP</u> Phone <u>78211</u>	Tests Required <u>Subunit</u>
Acc'ting Chg. _____	Report in Term of <u>mg</u>
	Precision Required <u>±10%</u> Priority <u>1</u>
	Total No. of Samples <u>5</u>

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

None

Approved for Analysis JLL Laboratory Priority A

Laboratory No.	Originator's Identification	Results
1175	1	5.5 mg / sample
1176	2	0 mg / sample
1177	3	5.5 mg / sample
1178	4	5.0 mg / sample
1179	5	6.0 mg / sample

Analyst FKK Date Completed 10/9/53 Approved by JLL

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. 1175-117

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator B. J. J. Date 12-5-53
Address HP Phone 78511
Acc'ting Chg. _____

Sample Identification 1-5Tests Required ExposureReport in Term of 7/7Precision Required 1/4 Priority 1Total No. of Samples 5

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

NoneApproved for Analysis J. G. J.Laboratory Priority A

Laboratory No.

Originator's Identification

Results

1175

1176

1177

1178

1179

5.5 - 1/4 - 1/4

0.1 - 1/4 - 1/4

5.5 - 1/4 - 1/4

5.0 - 1/4 - 1/4

5.0 - 1/4 - 1/4

Analyst 9KH Date Completed 10/9/53 Approved by J. G. J.

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. 1185-89

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator Bryman Date 10/9/53
Address HP Phone 78-211
Acc'ting Chg. _____

Sample Identification 11-15
Tests Required SaO₂ count
Report in Term of 7/9
Precision Required ± 5% Priority 1
Total No. of Samples 5

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

None

Approved for Analysis JLSLaboratory Priority A

Laboratory No.	Originator's Identification	Results
1185	11	8.75 mg / Sample
1186	12	Blank
1187	13	8.75 mg / Sample
1188	14	8.45 mg / Sample
1189	15	8.45 mg / Sample

Analyst E. S. LueckDate Completed 10-13-53Approved by JLS

HEALTH PHYSICS ANALYTICAL SECTION

Lab. No. 1180-118

REQUEST FOR ANALYSIS AND PREPARATION OF MATERIALS

Originator <u>Baumann</u> Date <u>10-7-53</u>	Sample Identification <u>6-10</u>
Address <u>H.P.</u> Phone <u>78-211</u>	Tests Required <u>Solvent</u>
Acc'ting Chg. _____	Report in Term of <u>7/9</u>
	Precision Required <u>01-1/9</u> Priority <u>1</u>
	Total No. of Samples <u>5</u>

DETAILS OF SERVICE REQUESTED

Form and source of material, interfering substances, special precautions, estimated activity or concentration of materials to be tested for.

None

Approved for Analysis JLY Laboratory Priority A

Laboratory No.	Originator's Identification	Results
1180		8.75 mg/sample
1181		8.05 mg / Sample
1182		Blank
1183		6.0 mg / Sample
1184		6.5 mg / Sample

Analyst J. K. Housch Date Completed 10-9-53 Approved by _____

$$X_{max} = \frac{2000 \text{ } \phi(C_2)}{6\pi h^2 u(C_1)}$$

$$X_{max} = \frac{2000}{2.718} \times \frac{0.0225}{3.14} \times \frac{1}{25^2} \times \frac{1}{0.2}$$

$$X_{max} = \frac{4500}{1070}$$

$$= 0.04 \text{ mg/m}^3$$

$$h = \frac{1.5 V_3 \phi}{u}$$

$$\frac{\phi}{2\pi \times 1.5 \times V_3 \times d_s \times h} \left(\frac{q}{h} \right)$$

$$\frac{\phi}{\cancel{1.5 \times V_3 \times d_s \times h}} u$$

$$X_{max} = \frac{\phi}{25.62 \times V_3 \times d_s \times h} \frac{125}{200}$$

$$X_{max} = \frac{\phi}{2 \times \pi \times h \times (1.5 V_3 d_s)}$$

$$2 \times \pi \times h \times V_3$$

$$(6.3 \times 25 \times 25.62)$$

$$22.000$$

$$10.50$$

$$\frac{122.50}{4035}$$

$$\frac{0.00557}{0.1}$$

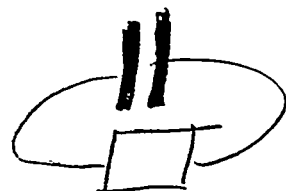
$$\frac{12.5}{40.50}$$

$$\left(n + 1.5 \frac{\sqrt{s}}{u} ds \right)^{2-n} = \left[\frac{2Q}{\pi c^2 u X_{\max}} \right]^{\frac{1}{2-n}} \quad (2-n)$$

$$(x+y)^2 \neq x^2 + y^2$$

$$(x+y)^a = \left(z^{\frac{1}{a}} \right)^a$$

min.	0.305 m	4.28 Hz	15.4 m/sec.
60 Sec.			



$$h^{2-n} + \left(1.5 \frac{v_s}{u} d_s\right)^{2-n} = \left(\frac{2 \phi^{n/2} \text{rec.}}{\pi c^2 \mu X_m} \right)^{\frac{2-n}{2-n}}$$

$$\underline{X}_m = \frac{\phi}{\pi c^2 \mu \left(h^{2-n} + 1.5 \frac{v_s}{u} d_s \right)^{2-n}}$$

$$\underline{X} =$$

$$h^{2-n} +$$

360 + 840

$$\underline{X} = \frac{2 \phi}{\pi c^2 \mu h^n}$$

$$25^{1.75} + \left(1.5 \frac{8.9}{0.2} 0.7\right)^{1.75} = \frac{2 \times 21}{3.14 \times 0.1 \times 0.2 \times \underline{X}_{\text{max}}}$$

$$360 + \frac{840}{1200} = \frac{42}{0.0628 \underline{X}_m}$$

$$1200(0.0628) \underline{X}_m = 42$$

$$\underline{X}_m = \frac{42}{75.36} = \underline{\underline{0.55}} \frac{\text{mg}}{\text{m}^3}$$

$$\left(\frac{257}{46.6} \cdot 1.5 \cdot \frac{8.9}{0.2} \cdot 0.7 \right)^{1.75} = \frac{29}{\pi c^2 u \bar{X}_{max}}$$

$$\bar{X}_{max} = \frac{42}{3.14 \times 0.1 \times 0.2 \times (71.6)^{1.75}}$$

$$\bar{X}_{max} = \frac{42}{\frac{0.0628 \times 1750}{110}} = \underline{\underline{0.038}}$$

$$\left[25 + \left(1.5 - \frac{15.4}{0.2} \cdot 0.7 \right) \right]^{1.75} = \frac{42}{0.0628 \bar{X}_{max}}$$

$$\frac{80.8}{25} = 105.8$$

$$(105.8)^{1.2}$$

$$\frac{42}{(3.5 \times 10^3)(6.28 \times 10^{-2})} = \frac{42.0}{220}$$

0.18 mg	$\frac{125}{7500} \text{ ft}^3$	mm
ft ³	min.	60 s

~ ~ ~

$$28" \phi = \frac{28}{4} \times \frac{28}{4} \times \frac{\pi}{144} = \underline{4.28 \text{ ft}^2}$$

$$Q = \underline{7500 \text{ cfm}}$$

$$V = \frac{Q}{A} = \frac{7500}{4.28} = \underline{1750 \text{ fpm}}$$

$$h = 80 \text{ ft} = 80 \times 0.305 = 24.4 \text{ m.}$$

$$0.305 \frac{\text{m}}{\text{ft}} \quad V = \frac{1750 \text{ ft}}{\text{min}} \times \frac{\text{min}}{60 \text{ s}} \times \frac{0.305 \text{ m}}{\text{ft}} = \underline{8.9 \text{ m/sec.}}$$

$$h = 24.4 \text{ m}$$

$$V = 8.9 \text{ m/s}$$

$$u = 0.2 \text{ m/s}$$

$$d_s = 0.712$$

$$Q = 0$$

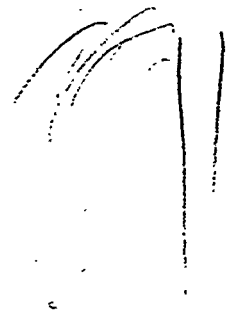
$$z = 0.09$$

$$u =$$

$$\frac{\text{ft}}{\text{day}} \times \frac{1 \text{ day}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ s}} \times \frac{1 \text{ s}}{1000 \text{ mg}} \times \frac{1 \text{ mg}}{1 \text{ g}} \times \frac{1 \text{ g}}{1 \text{ kg}} \times \frac{1 \text{ kg}}{2600 \text{ lb}} \times \frac{1 \text{ lb}}{1 \text{ kg}} =$$

8 mg/ft = 6.35 mg/m

4 in dia



$$X = \frac{2 \phi}{\pi c^2 u 30^{(1.25)}} \cdot 11^m$$

$$X = \frac{\cancel{2X} \cancel{1.25} 45}{3.14 \times .1 \times 0.2 \times (30)^{1.25}}$$

$$2.14 \times .1 \times 0.2 \times 2.34$$

$$\begin{array}{r} 2.3 \\ .02 \\ \hline .046 \\ 31X \\ \hline .15 \end{array}$$

~~6.35~~ 1.8 mg/ft³

$$\begin{array}{r} 142 \\ 7500 \text{ ft/m} \\ \hline 60 \end{array}$$

$$\frac{4/25}{.15} = 300 \text{ cfr.}$$

1.5 $\frac{1.5}{v}$ 1.5 x 9 x 7. $\frac{1.63}{3.2}$ $\frac{9.5}{9.5}$

$$\begin{array}{r} 142 \\ .18 \\ \hline 284 \\ 28 \\ \hline 25.6 \end{array} \quad 22.5$$

$$X_{\text{imp.}} = \frac{22.5}{6.28 \times 2.72 \times (1.5 \times 9.5 \times 25)}$$

4.5

$\frac{Q}{17.08/1.5 \times 8.5}$

$$\frac{22.5}{17.1 \times \cancel{1.730} \times 3}$$

$$\frac{22.5}{2.96 \times 10^3} = 7.6 \times 10^{-3}$$

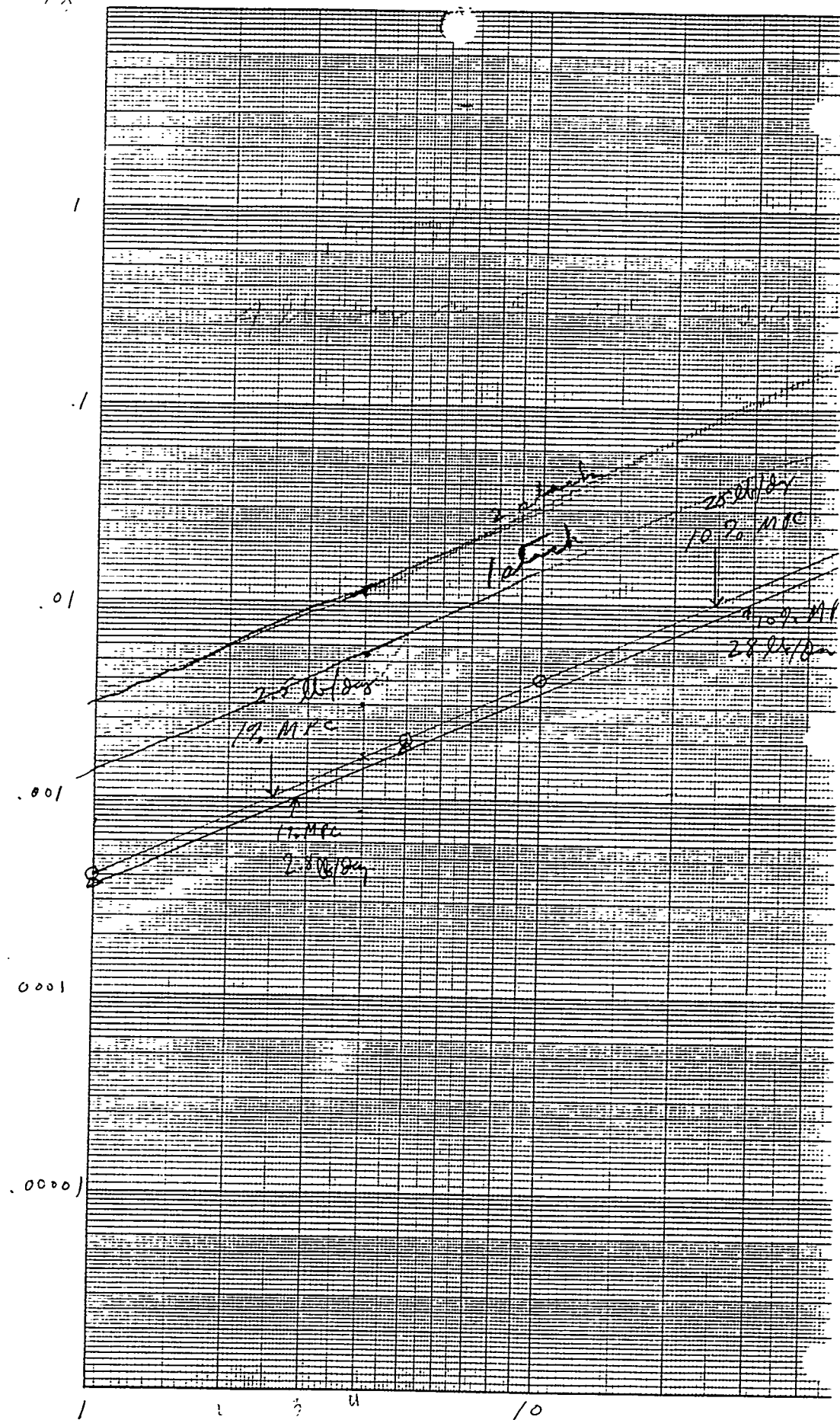
17.1 x 9.5 x 25

7.6 x 10⁻³ mg/m

$$\frac{22.5}{17.1} = 4060$$

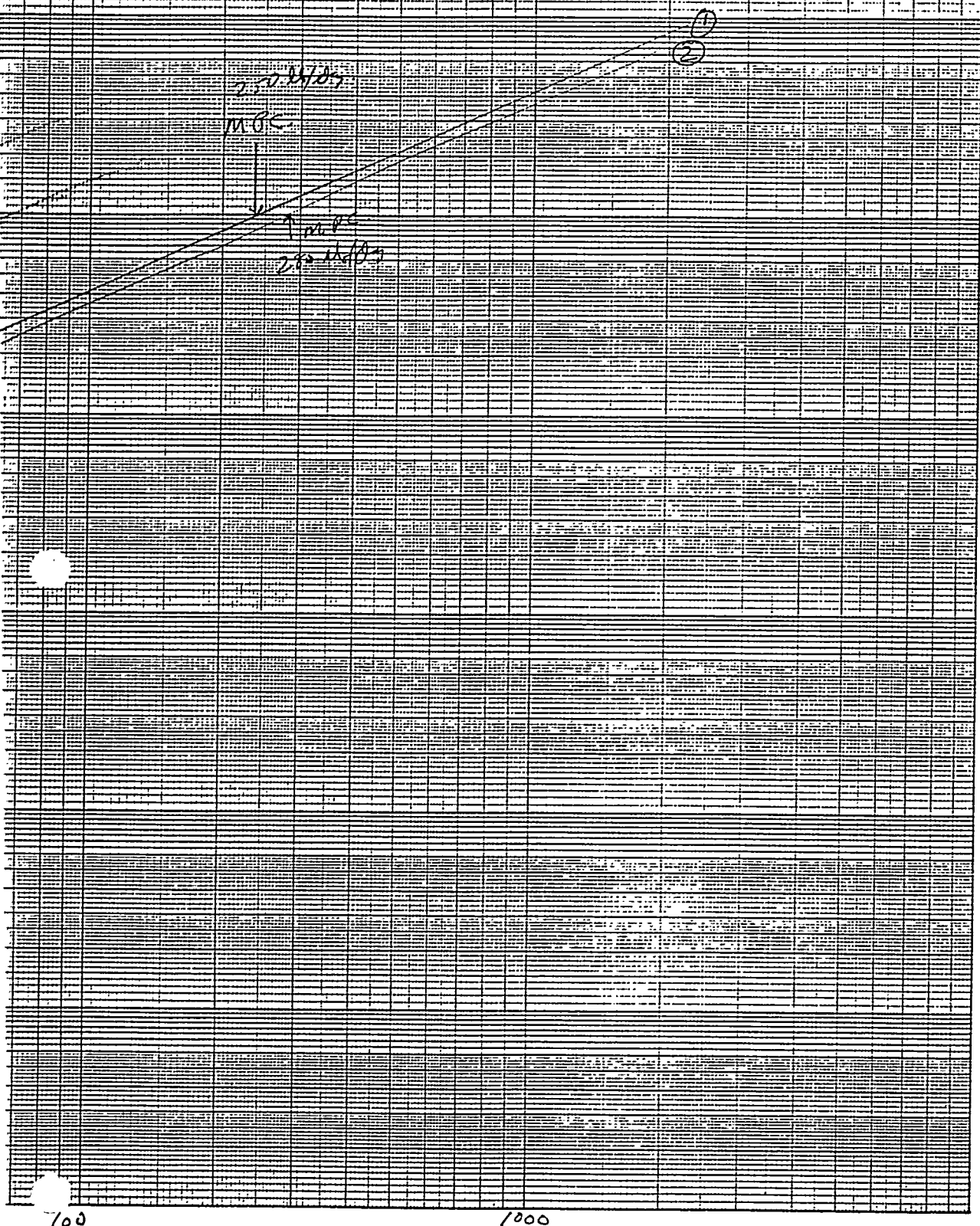
$$\frac{22.5}{41. \times 10^3} = 5.5 \times 10^{-3}$$

Max gnd conc. - $115 \mu\text{m}^3$ 173.



H_3 - Loss

- ① 30" 25 mds stick - 1200 cfm
- ② 28" stick 3100 fpm 1200 cfm



onds/day

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A. K. Lee

6/7/90

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Y/HG-0080 DEL
(M-827)

Health Physics reports on solvent
Building 9204-4
1954

1954,

1955

Y/HG-00/Subnumber

- 80/1 First quarter 1954. West to Whitson, April 26, 1954. 4pp.
- 80/2 Second quarter 1954. West to Whitson, August 3, 1954. 4pp.
- 80/3 Third quarter 1954. West to Whitson, November 17, 1954. 3pp.

M-827

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson (2)
LOCATION Bldg. 9204-4

DATE April 26, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO R. F. Hibbs
R. D. Williams (6)
H. C. McBirney
L. W. Bagwell
J. W. Strohecker
C. A. Kasperek
L. C. Emerson, Y12RC ✓
File

SUBJECT Health Physics Report -
Building 9204-4, First
Quarter 1954

Y/HG-0080/1 DEL

The tables below summarize the results of the solvent urine and air analyses made during the first quarter of 1954 in Building 9204-4.

Results for the previous quarter are included for comparison. Table I shows that all averages for air and urine concentrations are below the maximum permissible limit (MPL) of .1 mg/M³ and .3 mg/l respectively.

TABLE I
Summary of Air and Urine Solvent Concentration

Area	Sol. Air Concentration mg/M ³				Sol. Urine Concentration mg/l	
	4th Qt. 1953		1st Qt. 1954		1st Quarter	4th Quarter
	IVD*	RVD**	IVD*	RVD**	1954	1953
Top Trays	.04		.05		.08	.12
Bottom Trays	.04		.06	.04	.10	.14
Tray Control Rm. and Central Control Rm.	.01		< .01		.05	.12
Sol. Purification Rm.	.09	.08		.09	.17	.48
Evaporator & Absorber Recycle	.04		.03		.10	.17
Chemical Recovery	.08	.07		.06	.14	.12
Demineralizer, Feed						
Prep. and Extract	.05		.05		.04	.17
Product Finishing	.01		< .01		.06	.12

* Instantaneous vapor detector (portable instrument).

** Recording vapor detector.

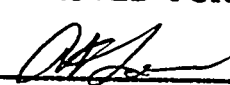
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Technical Information Office Date 3/24/71

Table II and IIA give a further breakdown on the air results. The air contamination levels indicated by these results are roughly the same as those obtained last quarter. Of the eleven areas in which comparable samples were obtained for both periods, five showed a higher solvent concentration this period, four were lower, and three had the same level. The average finding of all portable vapor detector samples show a decrease over those of the final quarter of 1953, while the average levels indicated by the recording vapor detectors remained the same. The bonnet repair area had a significant rise in solvent levels.

TABLE II
Solvent Air Analysis - Portable Vapor Detector

Area	No. of Wks. Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	4th	1st	4th	1st	4th	1st	4th	1st
Sol. Purification	9		484		23		.09	
Chem. Recovery	8		395		24		.06	
Top Tray	10	10	313	171	1	6	.04	.05
Lower Tray	11	9	273	75	1	2	.04	.04
Evap. and Ab- sorber Recycle	7	6	103	99	9	2	.04	.03
Demineralizer, Feed Prep. and Extract	4	4	60	48	5	4	.05	.05
Machine Shop	2	1	26	12	3	0	.05	.05
Central Control Room	1	2	44	88	0	0	.01	<.01
Product Finishing	1	1	30	32	0	0	.01	0
Bonnet Repair Area	5	4	66	51	5	12	.04	.09
Men's Change Rm.	1		15		0		.02	
Bonnet Storage Area		1		10		0		.03
Lunch Room		1		17		0		.01
Product Fab.		1		17		0		0
Totals and Average			1833	620			.06	.04

* Sample - Instantaneous reading of solvent concentration on a vapor detector.

Table IIA
Solvent Air Analyses - Recording
Vapor Detector

Area	No. of Wks. Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	4th	1st	4th	1st	4th	1st	4th	1st
Chem. Recovery	12	14	408	479	18	8	.07	.06
Sol. Purification	13	14	431	462	19	28	.08	.09
Lower Trays	7	10	64	62	1	1	.03	.04
Machine Shop	5	14	31	92	0	14	.05	.07
Feed Prep. Rm.		10		60		10		.07
Totals and Average			934	1155			.07	.07

* Sample - A twenty-four recording of solvent concentration on a vapor detector.

Table III gives more detailed information on the urine program. The average urinary solvent concentration increased in the analyses done on personnel assigned to the chemical recovery area. This increase was expected since the chemical recovery area was not in operational at the time of the last quarters urine sampling. All other sections had significantly lower average solvent-urine findings than those previously shown.

TABLE III
Solvent Urine Analyses

Area	Approx. No. of Employees	No. Scheduled to Partici- pate	No. Employees Participat- ing	% of Analyses > .3 mg/l	Sol. Urine Conc. . mg/l		Standard Deviation mg/l
					Quarter		
					4th.	1st	
Top Trays	70	20	18	0	.12	.08	± .04
Bottom Trays	70	58	50	0	.14	.10	± .07
Tray Control Rm.							
Central Control Rm.	20	8	7	0	.12	.05	± .03
Sol. Purification	13	14	14	22	.48	.17	± .17
Evaporator and Absorber	21	24	22	0	.17	.10	± .09
Chem. Recovery	35	23	20	5	.12	.14	± .08
Demineralizer, Feed							
Prep. and Extract	34	8	7	0	.17	.04	± .02
Product Finishing	71	10	5	0	.12	.06	± .06
Totals and Average	334	165	143	3	.16	.09	± .07


April 26, 1954

This quarter only four persons, shown in Table IV below, exceeded a urinary solvent excretion rate of .3 mg/l.

TABLE IV
Personnel Exceeding An Excretion Rate of .3 mg/l

Name	Badge No.	Area	Solvent Urine Concentration mg/l
		Solvent Control Room	.60
		Solvent Control Room	.56*
		Solvent Control Room	.30*
		Chemical Recovery	.32

* Have appeared on this list two consecutive quarters. The results of the urine analyses are being reported to the Medical Department. Any recommendation concerning transferring or removing personnel will come through that department.


C. M. West
Health Physics Department

CS

8/7/54
LCE

M-821

INTERCOMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9201-1

DATE August 3, 1954

ANSWERING LETTER DATE

ATTENTION
COPY TO J. P. Murray
R. F. Hibbs
R. D. Williams (6)
L. W. Bagwell
J. W. Strohecker
C. A. Kasperek
C. R. Sullivan, Jr., M.D.
L. C. Emerson, Y12RC
File

SUBJECT Health Physics Report -
Building 9204-4 - Second
Quarter 1954

Y/HG-0080/2DEL

The table below gives a resumé of the solvent urine and air findings obtained in Beta-4 during the second quarter of 1954. Results for the first quarter are included for comparison.

TABLE I

Summary of Air and Urine Solvent Concentration

Area	Sol. Air Concentration mg/M ³				Sol. Urine Concentration mg/l	
	1st Qt. 1954		2nd Qt. 1954		2nd Quarter	1st Quarter
	IVD*	RVD**	IVD*	RVD**	1954	1954
Cascade	.06	.04	.10	.12	.09	.14
Chemical Recovery		.06	.14	.09	.14	.13
Demineralizer, Feed						
Prep. and Extract	.05		.06	.07	.04	.07
Product Finishing	<.01		.01		.06	.05
Solvent Purification						
and Evaporator Feed	.03	.09	.10	.07	.12	.14

* Instantaneous vapor detector (portable instrument).

** Recording vapor detector.

APPROVED FOR PUBLIC RELEASE

Albe 3/24/54
Technical Information Office Date

Table II and IIA gives a more specific breakdown on air results. The air contamination levels shown by these findings are higher than those obtained last quarter. Of the ten areas where portable vapor detector samples were taken both quarters, seven showed an increase in concentration over the previous period. Four of the thirteen areas sampled this quarter had a solvent air concentration of the maximum permissible limit of .1 mg/M³ or greater on one or both types of samples. Increased temperatures are chiefly responsible for these rises in air contamination.

TABLE II

Solvent Air Analyses - Portable Vapor Detector

Area	No. of Wks. Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Sol. Purification		2		31		32		.11
Chem. Recovery		2		54		64		.14
Top Tray	10	12	171	1049	6	36	.05	.10
Lower Tray	9	12	75	428	2	38	.04	.12
Evap. and Ab- sorber Recycle	6	3	99	56	2	18	.03	.09
Demineralizer, Feed Prep. and Extract	4	8	48	147	4	4	.05	.06
Tray Control and Central Control	2	1	88	47	0	0	<.01	<.01
Lunch Room	1	1	17	16	0	0	.01	.04
Product Finishing	1	1	32	33	0	0	0	.01
Product Fabrication	1		17		0		0	
Bonnet Repair	4	8	51	138	12	15	.09	.07
Mechanical Shop	1	1	12	12	0	0	.05	.04
Bonnet Storage	1	2	10	27	0	15	.03	.08
Flow Control		9		153		20		.09
Totals and Average			620	2191 -			.04	.10

* Sample - Instantaneous reading of solvent concentration on a vapor detector.

TABLE IIA

Solvent Air Analyses - Recording
Vapor Detector

Area	No. of Wks. Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Chem. Recovery	14	12	479	402	8	26	.06	.09
Sol. Purification	14	12	462	388	28	18	.09	.08
Bottom Trays	10	12	62	82	1	30	.04	.11
Demineralizer, Feed		2	60	9	10	11	.07	.07
Prep. and Extract		10		59		0		.05
Evap. Feed Room		10	92	58	14	0	.07	.06
Mechanical Shop		8		38		80		.14
Top Trays								
Totals and Average			1155	1036			.07	.09

* Sample - A twenty-four hour recording of solvent concentration on a vapor detector.

Table III gives more detailed information on the urine program. All areas show an average solvent urine concentration well below the limit of .3 mg/l.

TABLE III

Solvent Urine Analyses


Area	No. Scheduled To Participate	No. Employees Participating	% of Analyses > .3 mg/l	Sol. Urine Conc. mg/l		Standard Deviation mg/l
				Quarter		
				1st	2nd	
Cascade	187	138	7	.08	.14	± .10
Chem. Recovery	39	29	0	.14	.13	± .07
Demineralizer, Feed						
Prep. and Extract	36	25	0	.04	.08	± .04
Product Finishing	33	10	0	.06	.05	± .04
Sol. Purification						
and Evaporator Feed	41	31	6	.14	.15	± .11
Totals and Average	336	233	5	.09	.13	

Twelve persons, listed in Table IV below, showed a urinary solvent excretion rate of .3 mg/l or more. There were only four names on a similar list for last quarter.

TABLE IV

Personnel Exceeding An Excretion Rate of .3 mg/l

Name	No. Badge	Area	Solvent Urine Conc. mg/l
		Cascade	.306
		Cascade	.434
		Cascade	.375
		Cascade	.386
		Cascade	.349
		Cascade	.349
		Cascade	.306
		Cascade	.423
		Cascade	.386
		Solvent Purification	.315
		Solvent Purification	.535
			.315


C. M. West
Health Physics Department

L;W:ej

LC 2
11/24/54 INTER COMPANY CORRESPONDENCE
(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN. M-827

TO W. K. Whitson
LOCATION Building 9201-2

DATE November 17, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
G. A. Strasser
W. A. Pfeiler
R. D. Williams (6)
J. W. Strohecker
C. R. Kasperek
C. R. Sullivan, Jr., M.D.
L. J. LaFrance
L. C. Emerson, Y12RC
File

SUBJECT Health Physics Report -
Building 9204-4 - Third
Quarter 1954

Y/HG-0080/3 DEL

The table below gives a resumé of the solvent urine and air findings obtained in Beta-4 during the third quarter of 1954. Results for the second quarter are included for comparison.

TABLE I

Summary of Air and Urine Solvent Concentration

Area	Sol. Air Concentration mg/M ³				Sol. Urine Concentration mg/l	
	2nd Qt. 1954		3rd Qt. 1954		2nd Quarter	3rd Quarter
	IVD*	RVD**	IVD*	RVD**	1954	1954
Cascade	.10	.12	.09	.12	.09	.14
Chemical Recovery	.14	.09		.08	.14	.14
Demineralizer, Feed						
Prep. and Extract	.06	.07	.04	-	.04	.08
Product Finishing	.01		.03	-	.06	
Solvent Purification						
and Evaporator Feed	.10	.07	.03	.07	.12	.13

* Instantaneous vapor detector (portable instrument).

** Recording vapor detector.

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Technical Information Office Date 3/24/54

Table II and IIA gives a more specific breakdown on air results. The air contamination levels shown by these findings are lower than those obtained last quarter. Of the eleven areas where portable vapor detector samples were taken both quarters, only one showed an increase in concentration over the previous period. Two of the thirteen areas sampled this quarter had a solvent air concentration of the maximum permissible limit of .1 mg/M³ or greater on one or both types of samples.

TABLE II

Solvent Air Analyses - Portable Vapor Detector

Area	No. of Wks Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	2nd	3rd	2nd	3rd	2nd	3rd	2nd	3rd
Sol. Purification	2		31		32		.11	
Chem. Recovery	2		54		64		.14	
Top Trays	12	12	1049	847	36	30	.10	.09
Lower Trays	12	12	428	798	38	22	.12	.09
Evap. and Ab- sorber Recycle	3	5	56	81	18	0	.09	.03
Demineralizer, Feed Prep. and Extract	8	12	147	362	4	4	.06	.04
Tray Control and Central Control	1	1	47	44	0	0	<.01	0.0
Lunch Room	1	2	16	25	0	0	.04	.02
Product Finishing	1	1	33	35	0	0	.01	.03
Product Fabrication	1		17		0		0.0	
Bonnet Repair	8	11	138	185	15	0	.07	.05
Mechanical Shop	1	2	12	34	0	0	.04	.03
Bonnet Storage	2	10	27	113	15	8	.08	.08
Flow Control	9	7	153	116	20	10	.09	.07
Totals and Average			2191	2640			.10	.07

* Samples - Instantaneous reading of solvent concentration on a vapor detector.

TABLE IIA

Solvent Air Analyses - Recording
Vapor Detector

Area	No. of Wks Sampled		No. Samples*		Per Cent Samples > MPL		Sol. Air Conc. mg/M ³	
	Quarter		Quarter		Quarter		Quarter	
	2nd	3rd	2nd	3rd	2nd	3rd	2nd	3rd
Chem. Recovery	12	13	402	430	26	22	.09	.08
Sol. Purification	12	13	388	430	18	5	.08	.07
Lower Trays	12	13	82	222	30	31	.11	.10
Demineralizer, Feed Prep. and Extract	2	-	9	-	11	-	.07	-
Evap. Feed Room	10	-	59	-	0	-	.05	-
Mechanical Shop	10	-	58	-	0	-	.06	-
Top Trays	8	13	38	812	80	60	.14	.12
Totals and Averages			1036	1894			.09	.10

* Sample - A twenty-four hour recording of solvent concentration on a vapor detector.

Table III gives more detailed information on the urine program. All areas show an average solvent urine concentration well below the limit of .3 mg/l.

TABLE III

Solvent Urine Analyses

Area	No. Scheduled To Participate	No. Employees Participating	% of Analyses > .3 mg/l	Sol. Urine Conc. mg/l		Standard Deviation mg/l
				Quarter		
				3rd	2nd	
Cascade	143	126	13	.14	.14	± .12
Chem. Recovery	36	32	9	.14	.13	± .12
Demineralizer, Feed Prep. and Extract	34	29	3	.06	.08	± .097
Sol. Purification and Evaporator Feed	35	32	6	.13	.15	± .12
Totals and Averages	248	219	10	.13	.13	

C. M. West
C. M. West

Health Physics Department

OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

AKL 6/4/90

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Document No. MS 5-29-90 P Author's Telephone No. 4-7593 Acct. No. 2366-001 Date of Request 5/25/90

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1ST, 2ND & 3RD QUARTERS OF 1954

Author(s) WEST, CM

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date):

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☒ Other (Specify): LETTERS TO W.K. WHITSON

Document will be published in proceedings ☒ No ☐ Yes

Document will be distributed at meeting ☒ No ☐ Yes

Document has patent or invention significance ☒ No ☐ Yes (Identify)

Document has been previously released ☒ No ☐ Yes (Reference)

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

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Title(s): UNC Abstract: NA

DOCUMENT: Level UNC Category NA

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☐ Editor _____ Date _____
☒ Patent Office: G. Keith Date: 6-6-90
☒ Other: D. C. Wood Date: 6-6-90
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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE January 12, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack J. M. Lister **SUBJECT** Weekly Solvent Report
L. W. Bagwell R. D. Williams Building 9204-4
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. Edw. G. Struxness, Y12RC
J. W. Ebert File
Dave Jennings

[Handwritten signature]
1-21-54

Y/4G-0081/1

The following air samples were taken during the week ending January 10, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	17	.02	.05	.03	0
Evap. Feed Room	16	.02	.07	.04	0
C.C.R.	10	0.0	.02	.01	0
Tray Control Room	34	0.0	.01	<.01	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg
Feed Purif. Mechanical	7	Column K-3/4, 10 1/2	.03	.04	.03
	7	Column C-15	.03	.09	.06

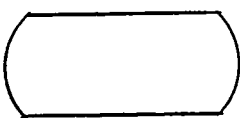
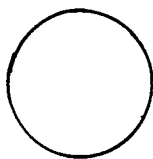
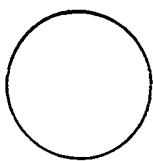
Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

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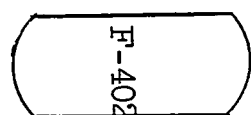
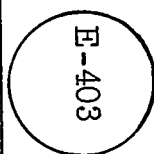
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W. H. Baumann
Industrial Hygiene Section
Health Physics Department

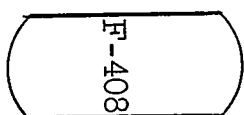
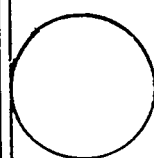
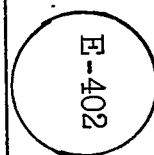
SOLVENT PURIFICATION ROOM



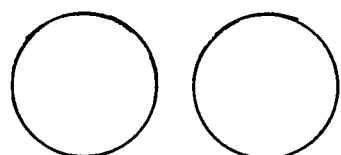
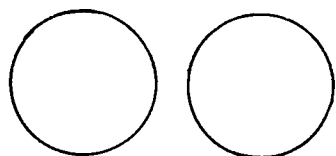
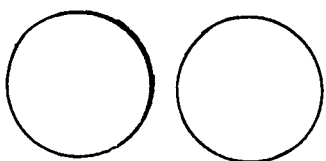
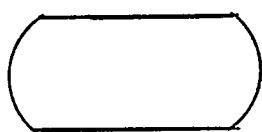
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CHEMICAL RECOVERY

LAUNDRY

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$$\frac{4}{0.3}$$

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Building 9204-4

DATE January 19, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

G. W. Flack
L. W. Bagwell
J. W. Strohecher
C. R. Sullivan, Jr., M. D.
J. W. Ebert
Dave Jennings

Neal Dow

R. D. Williams

C. A. Kasperek

Edw. G. Struxness, Y12RC

File

SUBJECT Weekly Solvent Report
Building 9204-4

Y/HG-0081/2

The following air samples were taken during the week ending January 17, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Cascade	17	0.0	.03	.02	1
Blender Station	16	.02	.15	.05	1

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Feed Purification	7	Column K-3/4, 10 1/2	.02	.11	.05
Mechanical Shop	7	Column C-15	.04	.10	.07

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

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Technical Information Office

Date

W. H. Baumann

Industrial Hygiene Section

Health Physics Department

WHB:GBA:CS

WCX-163 (3-51)

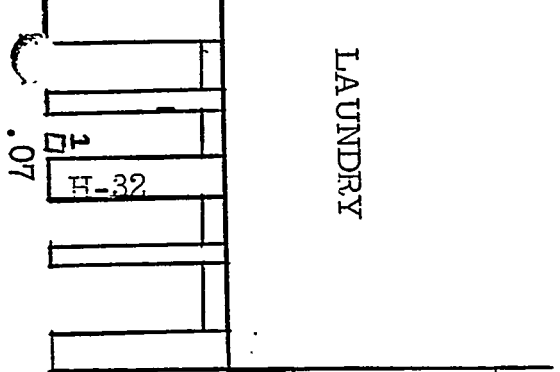
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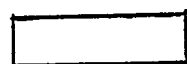
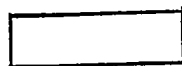
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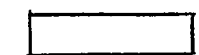
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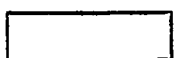
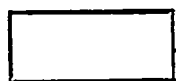
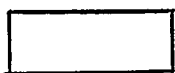
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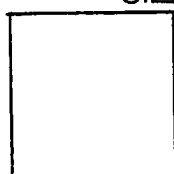
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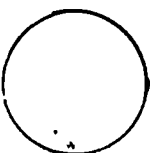
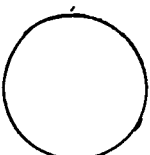
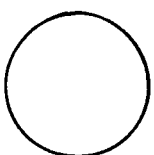
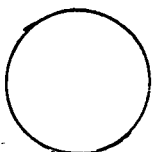
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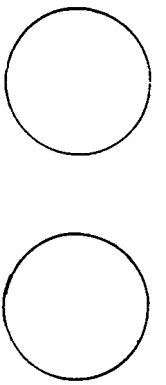
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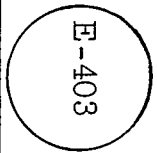
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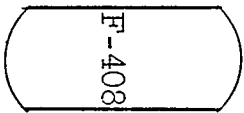
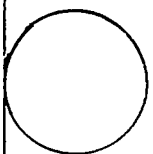
SOLVENT PURIFICATION ROOM



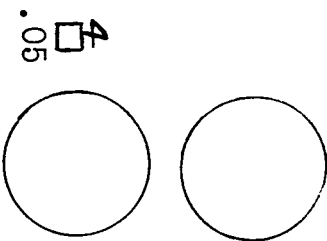
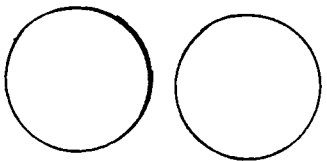
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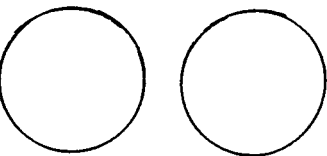
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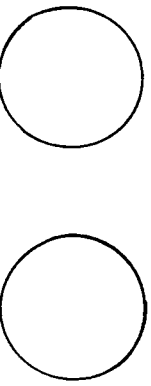
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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE January 26, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack Neal Dow SUBJECT Weekly Solvent Report
L. W. Bagwell R. D. Williams Building 9204-4
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. Edw. G. Struxness, Y12RC -
J. W. Ebert File
Dave Jennings

Y/HG-0081/3

The following air samples were taken during the week ending January 24, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Lunch Room	17	0.0	.03	.01	0
Cascade	17	.02	.12	.05	2
Evap. Feed Room	15	0.0	.07	.03	0
Bonnet Repair Area	13	.02	.19	.07	2

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Feed Purif. Area	7	Column's K-3/4, 10 1/2	.02	.06	.04
Mechanical Shop	7	Column C-15	.04	.06	.05

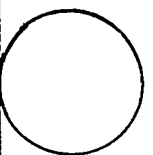
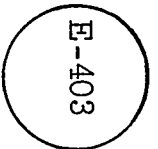
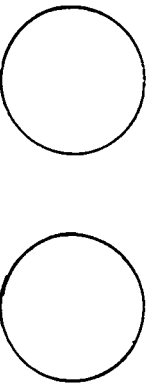
Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

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Technical Information Office Date

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

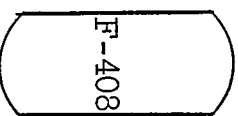
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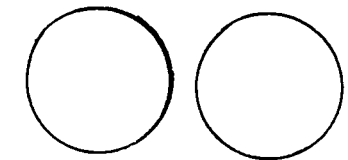
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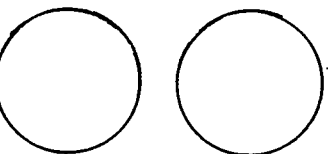
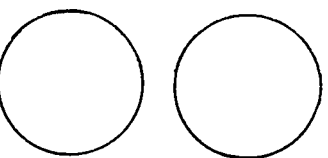
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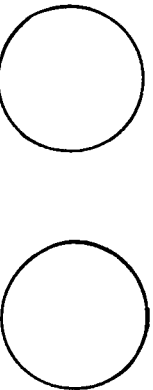


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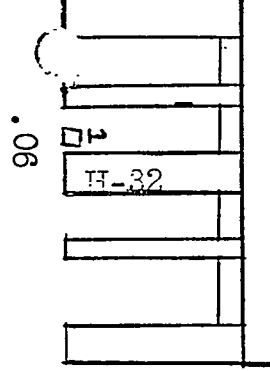


CHEMICAL RECOVERY

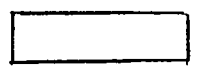
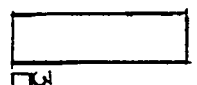
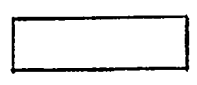
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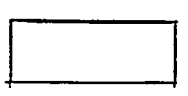
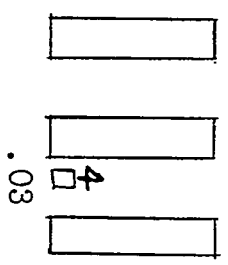
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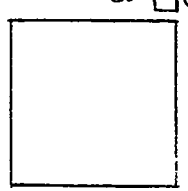
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.08



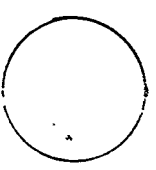
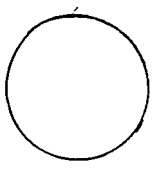
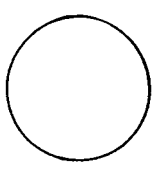
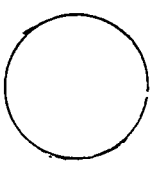
L-804



5
.06



F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE February 2, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack Neal Dow SUBJECT Weekly Solvent Report
L. W. Bagwell R. D. Williams Building 9204-4
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M.D. Edw. G. Struxness, Y12RC
J. W. Ebert File
Carl Frazier

Y/HG-0081/4

The following air samples were taken during the week ending January 31, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Evap. Feed Room	12	.01	.05	.03	0
Bonnet Repair Area	14	.04	.11	.07	2
Blender Stations	12	.04	.15	.07	1
Cascade	15	.04	.18	.07	3

The following table shows the twenty-four hour level of solvent contamination in the various areas.


Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	Column C-15	.02	.10	.06
Feed Purif. Area	7	South wall between tanks F-302 and F-305.	.02	.10	.05

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE

Technical Information Office

Date


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

THIS FORM FOR INTER-COMPANY CORRESPONDENCE ONLY

SOLVENT PURIFICATION ROOM

The high results this week are due to the two following incidents:

1. January 26 - Solvent and sludge was forced from the south plant storage tanks on to the floor when solvent from the pit tanks were pumped into them.
2. January 29 - Solvent and sludge was spilled on the floor while making changes in the solvent return line from north plant.

¹
□ .18

Col. G-12

.15 ⁵ □ H Col.
H-14

E-403

² □ .14

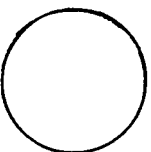
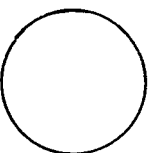
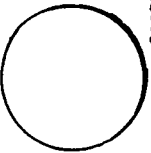
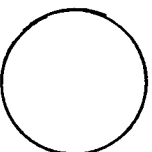
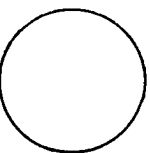
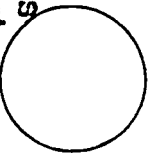
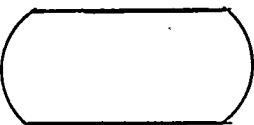
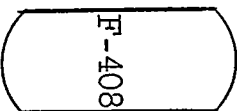
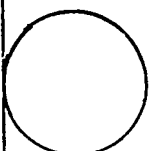
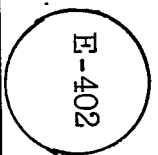
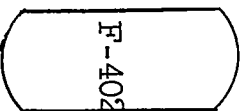
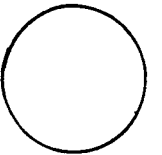
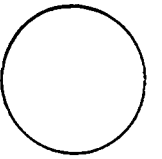
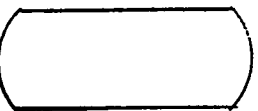
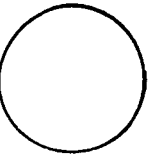
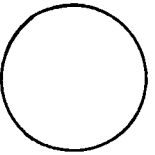
F-402

E-402

³ □ .18

F-408

⁴ □ .14



CHEMICAL RECOVERY

LAUNDRY

L-872

Evap.

H-32
1
.05

2
.06

3
.04

L-804

4
.04

5
.06

F-851

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE February 10, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack

L. W. Bagwell

J. W. Strohecker

C. R. Sullivan, Jr., M. D.

J. W. Ebert

Carl Frazier

Neal Dow

R. D. Williams

C. A. Kasperek

Edw. G. Struxness, Y12RC ✓

File

SUBJECT Weekly Solvent Report

Building 9204-4

Y/HG-0081/5

The following air samples were taken during the week ending February 7, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Extract	10	.01	.08	.06	0
Bonnet Storage Area	10	0.0	.05	.03	0
Blender Stations	15	.05	.17	.09	3
Cascade	17	.04	.12	.07	1

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg.
Mechanical Shop	7	Column C-15	.02	.05	.04
Feed Purification	7	South wall between tanks F-302 and F-305	.02	.24	.10

Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE

[Signature]

Technical Information Office Date

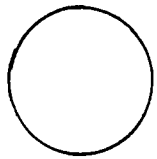
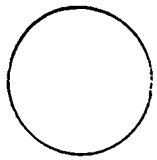
4/13/54

[Signature]

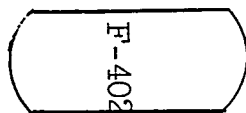
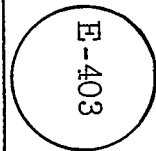
W. H. Baumann

Industrial Hygiene Section

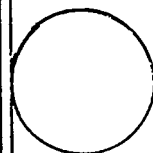
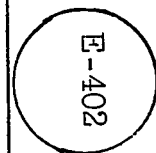
Health Physics Department



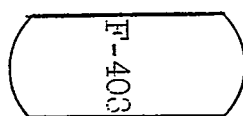
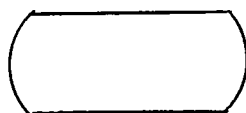
.09 \square^5 H Col.
H-14



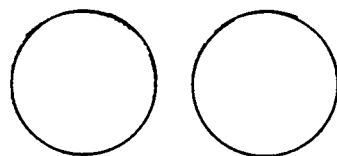
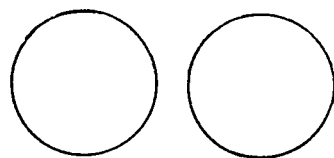
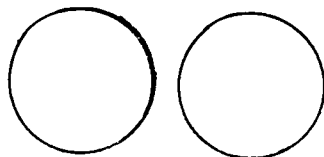
\square^2 .08



SOLVENT PURIFICATION ROOM

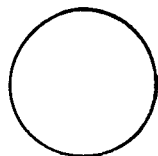
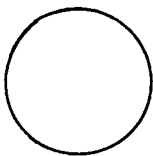


\square^3 .09



\square^1 .09

Col. G-12

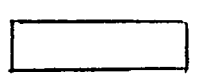
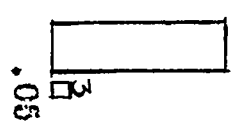
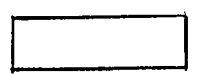
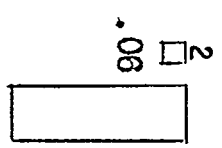
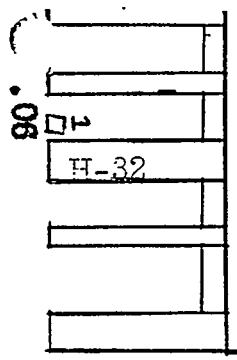


CHEMICAL RECOVERY

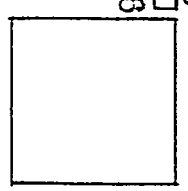
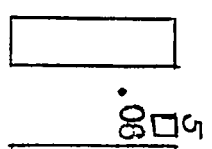
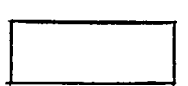
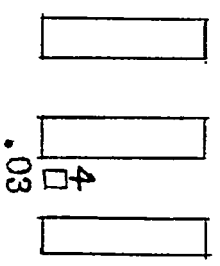
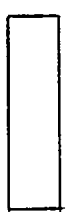
LAUNDRY

L-872

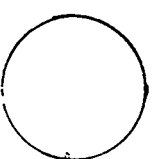
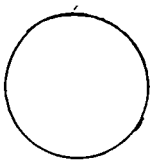
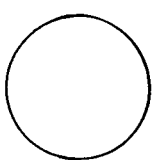
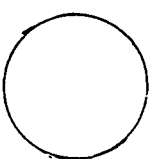
Evap.



L-804



F-851



INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO W. K. Whitson
LOCATION Bldg. 9204-4

DATE February 16, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray Neal Dow SUBJECT Weekly Solvent Report
G. W. Flack Carl Frazier Building 9204-4
L. W. Bagwell R. D. Williams
J. W. Strohecker C. A. Kasperek
C. R. Sullivan, Jr., M. D. Edw. G. Struxness, Y12RC ✓
J. W. Ebert File

Y/4G-0081/6

The following air samples were taken during the week ending February 14, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Feed Prep. Room	13	0.0	.13	.05	1
Cascade	20	0.0	.10	.03	0

The following table shows the twenty-four hour level of solvent contamination in the various areas.

Area	No. Days	Location	Daily Avg. Sol. Conc. mg/M ³		
			Low	High	Avg
Mechanical Shop	7	Column C-15	.03	.10	.05
Feed Purification	7	South wall between tanks F-302 and F-305	.05	.12	.10*

* This high average due to a solvent leak from a line and a spill.

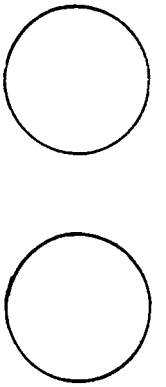
Attached are schematic designs of the Solvent Purification and Chemical Recovery Areas which show the location and weekly average of the permanently installed solvent detectors.

APPROVED FOR PUBLIC RELEASE

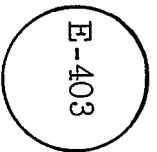
Technical Information Office Date 4/13/54

W. H. Baumann
Industrial Hygiene Section
Health Physics Department

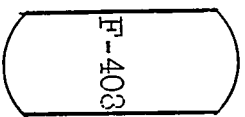
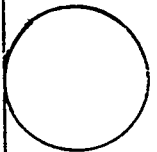
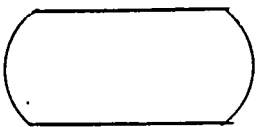
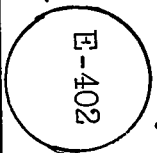
SOLVENT PURIFICATION ROOM



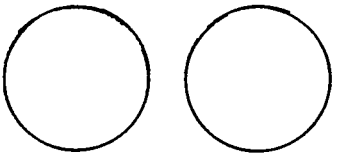
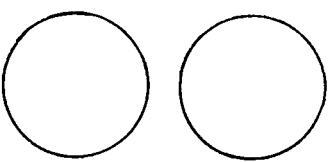
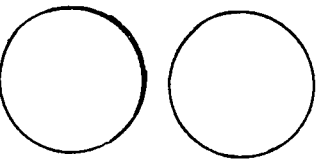
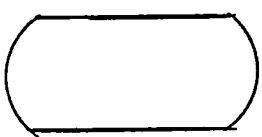
.08 \square ⁵ H Col.
H-14



\square ² .07



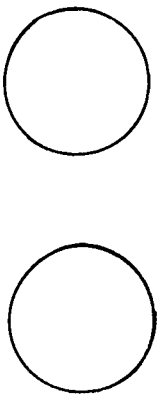
\square ³ .10



\square ⁴ .08

\square ¹ .07

Col. G-12

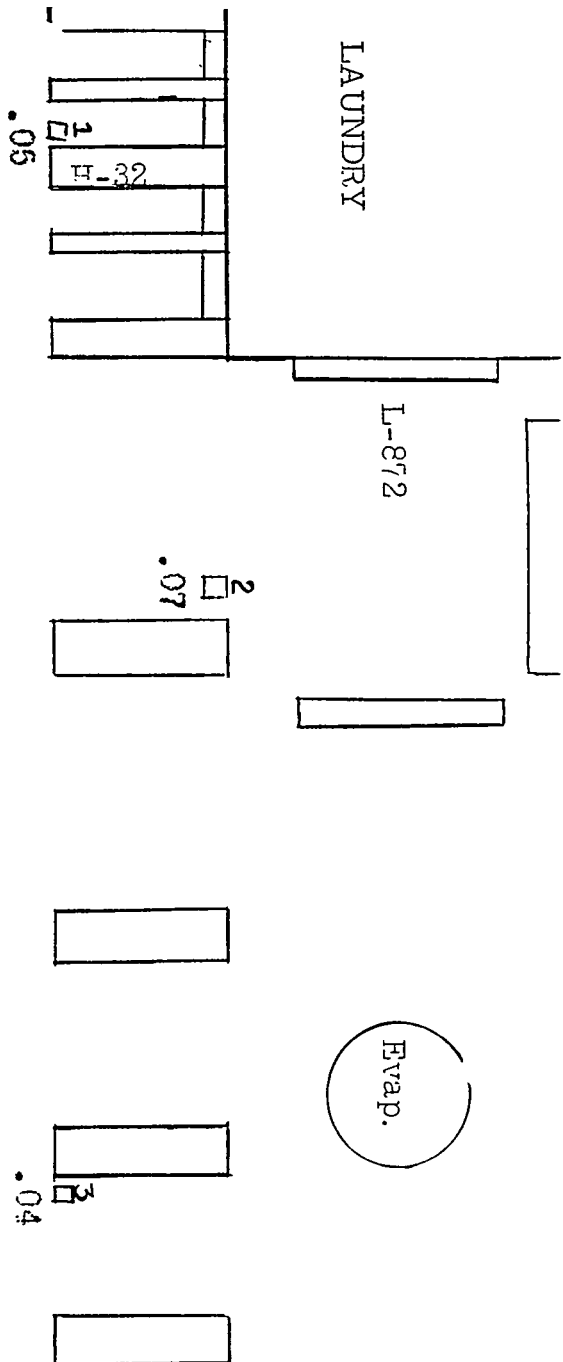


CHEMICAL RECOVERY

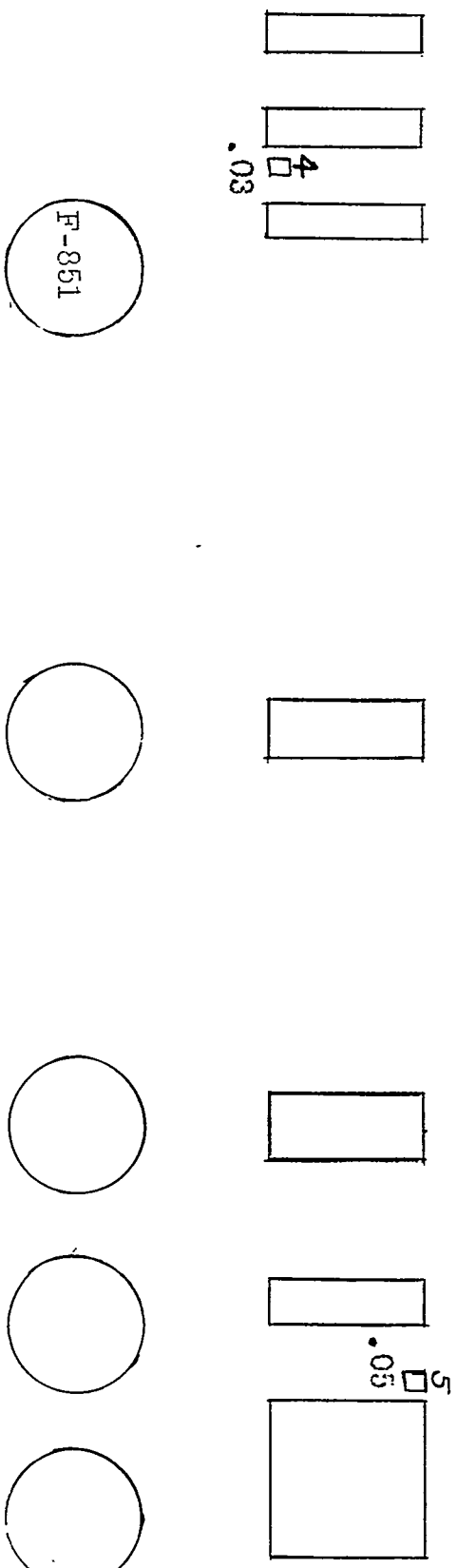
LAUNDRY

L-872

Evap.



L-804



F-851

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO G. H. Clewett
LOCATION 9733-1

DATE July 7, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO

L. P. Twitchell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson

R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, Y12RC
File ~~_____~~

SUBJECT

Weekly Solvent Report

The following air samples were taken during the week ending July 5, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Pilot Plant	33	.00	0.08	.02	0
C.T.F.	65	.00	0.41	.09	23
2nd Floor Lab.	30	.00	0.78	.18	16
Mech. Area	46	.02	>1.70	.62	43
Colex	14	.00	0.20	.06	2
C.T.F. Maint.	14	.00	0.18	.02	1
<u>Building 9202</u>					
1st Floor	18	.00	0.24	.08	4
Mezz. Area	18	.04	0.22	.10	6
2nd Floor	30	.04	0.36	.17	23
3rd Floor	18	.02	0.32	.13	8
Penthouse	4	.07	0.18	.14	3
<u>Building 9728</u>					
OREX Clothing	11	.00	.04	<.01	0

W. H. Baumann

W. H. Baumann
Industrial Hygiene Section
Health Physics Department

GA:mcB

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO G. H. Clewett
LOCATION 9733-1

DATE July 14, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO L. P. Twitchell
L. W. Bagwell
G. W. Mitchell
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson

R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
E. G. Struxness, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending July 12, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Pilot Plant	33	.00	0.49	.08	10
C.T.F.	52	.00	0.43	.09	14
2nd. Floor Lab.	30	.03	0.53	.21	22
Mech. Area	47	.00	1.32	.39	35
Colex	14	.00	0.20	.07	5
<u>Building 9202</u>					
1st. Floor	24	.02	0.52	.21	21
Mezz. Area	24	.03	0.44	.19	20
2nd. Floor	40	.00	0.46	.20	35
3rd. Floor	24	.00	0.40	.16	12
Pent house	12	.09	0.64	.34	8
	124				96

W. H. Baumann
W. H. Baumann
Industrial Hygiene Secti
Health Physics Departmer.

GA:mcb

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 20, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett C. R. Sullivan, Jr., M. SUBJECT Weekly Solvent Report
L. P. Twichell J. W. Ebert
L. W. Bagwell H. T. Kite
G. W. Mitchel Joe Williams
G. A. Strasser J. M. Lister
H. M. McLeod, Jr. R. D. Williams
J. W. Strohecker Edw. G. Struxness, Y12RC
W. K. Whitson File ~~←~~
R. C. Kelly

The following air samples were taken during the week ending July 19, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
<u>Building 9201-2</u>					
Mech. Area	49	.00	.98	.21	27
2nd. Floor Lab.	30	.00	.28	.09	12
C.T.F.	52	.00	.30	.08	12
Pilot Plant	33	.00	.23	.06	6
Colex	14	.00	.15	.03	1
1st Floor Lab.	9	.00	.03	.01	0
Evaporation Area	3	.02	.18	.10	2
<u>Building 9202</u>	<u>140</u>				<u>60</u>
1st Floor	30	.00	.38	.11	14
Mezz. Floor	30	.00	.42	.14	19
2nd. Floor	50	.00	.34	.13	32
3rd. Floor	30	.00	.36	.13	19
Penthouse	12	.09	.42	.23	11

152

45

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:mcb

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 27, 1953

ANSWERING LETTER DATE

ATTENTION
COPY TO

G. H. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson

R. C. Kelly
C. R. Sullivan, Jr., M.D.
J. W. Ebert
H. T. Kite
Joe Williams
J. M. Lister
R. D. Williams
Edw. G. Struxness, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending July 26, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2	60	.00	1.01	.15	21
Mech. Area	36	.00	0.20	.09	13
2nd Floor Lab.	78	.00	0.61	.13	48
C.T.F.	22	.00	0.18	.07	5
Pilot Plant	14	.08	0.33	.16	11
Colex	39	.00	0.23	.09	20
C.T.F., Maint.	18	.00	0.13	.07	5
Building 9202	18	.00	0.17	.05	1
1st Floor	30	.00	0.26	.10	16
Mezz. Floor	18	.00	0.24	.09	6
2nd Floor	12	.08	0.54	.25	11
3rd Floor					
Penthouse					

WHB:mcb

W. H. Baumann
W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 3, 1953


ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett R. C. Kelly SUBJECT Weekly Solvent Report
L. P. Twichell C. R. Sullivan, Jr., M.D.
L. W. Bagwell J. W. Ebert
G. W. Mitchel H. T. Kite
G. A. Strasser Joe Williams
H. M. McLeod, Jr. J. M. Lister
J. W. Strohecker R. D. Williams
W. K. Whitson Edw. G. Struxness, Y12RC
File

The following air samples were taken during the period covering July 27 through July 31, 1953, to determine the level of solvent contamination in various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Building 9201-2	29	0.0	1.01	.33 X $\frac{2.9}{100}$	20
Mech. Area	18	.12	.26	.21 $\frac{1.8}{100}$	18
2nd Floor Lab.	39	0.0	.37	.07 $\frac{1.0}{100}$	7
C.T.F.	22	.03	.20	.07	5
Pilot Plant	13	0.0	.11	.04	1
Colex					
	<u>157</u>				


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 10, 1953

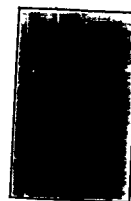
ANSWERING LETTER DATE

ATTENTION
COPY TO

G. W. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.
J. W. Strohecker
W. K. Whitson

R. C. Kelly
C. R. Sullivan, Jr., M. D.
J. W. Ebert
H. T. Kite
Joe Williams
R. D. Williams
J. M. Lister
Edw. G. Struxness, Y12RC
File ~~XXXX~~

SUBJECT Weekly Solvent Report



The following air samples were taken during the week ending August 9, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples >MPL
		Low	High	Avg.	
Bldg. 9201-2					
Mech. Area	36	.03	.45	.17	27
2nd Floor Lab.	24	0.0	.23	.09	5
C. T. F.	52	0.0	.26	.05	9
Pilot Plant	22	0.0	.12	.04	1
Colex	14	.03	.43	.12	6
C. T. F., Maint.	16 1/2 14	0.0	.11	.06	4 1/2 1
Bldg. 9204-4 (Sol. Room)	45 45	0.0	.77	.20	36 36

W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 17, 1953


ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett R. C. Kelly SUBJECT Weekly Solvent Report
L. P. Twichell C. R. Sullivan, Jr., M.D.
L. W. Bagwell J. W. Ebert
G. W. Mitchell H. T. Kite
G. A. Strasser Joe Williams
H. M. McLeod, Jr. J. M. Lister
J. W. Strohecker R. D. Williams
W. K. Whitson Edw. G. Struxness, Y12RC
File

The following air samples were taken during the week ending August 16, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
Bldg. 9201-2					
Mech. Area	27	0.0	.53	.10	6
2nd Floor Lab.	19	0.0	.15	.06	6
C. T. F.	13	.02	.16	.08	4
Pilot Plant	11	0.0	.03	.01	0
Colex	28	0.0	.22	.05	4
Large Colex	23	0.0	.53	.11	7
Bldg. 9204-4	27				18
Solvent Purification Rm.	60	0.0	.36	.09	18
Chemical Recovery Area	12	0.0	.09	.04	0


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 24, 1953


ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett R. C. Kelly SUBJECT Weekly Solvent Report
L. P. Twichell C. R. Sullivan, Jr., M. D.
L. W. Bagwell J. W. Ebert
G. W. Mitchell H. T. Kite
G. A. Strasser Joe Williams
H. M. McLeod, Jr. J. M. Lister
J. W. Strohecker R. D. Williams
W. K. Whitson Edw. G. Struxness, Y12RC
File

The following air samples were taken during the week ending August 23, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
Bldg. 9201-2					
C. T. F.	65	0.0	.25	.07	12
C.T.F. Maint.	14	0.0	.08	.03	0
Colex	14	0.0	.23	.08	6
Large Colex	22	0.0	.22	.07	4
2nd Floor Lab	24	0.0	.03	.01	0
Mech. Area	39	0.0	.20	.06	7
Bldg. 9204-4	178				29
Solvent Purf. Room	90	.03	.36	.15	57
Cascade	107	0.0	.26	.07	20
Sol. Dumping Area	40	0.0	.42	.10	10
Chem. Recovery	30	0.0	.26	.06	5
Blender Station	76	0.0	.21	.07	14
Evap. Area	15	0.0	.01	>.01	0
Spent Raffinate Area	12	0.0	.15	.05	1
	570				107


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 31, 1953


ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett R. C. Kelly SUBJECT Weekly Solvent Report
L. P. Twichell C. R. Sullivan, Jr., M. D.
L. W. Bagwell J. W. Ebert
G. W. Mitchell H. T. Kite
G. A. Strasser Joe Williams
H. M. McLeod, Jr. J. M. Lister
J. W. Strohecker R. D. Williams
W. K. Whitson Edw. G. Struxness, Y12RC
File

The following air samples were taken during the week ending August 30, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Bldg. 9204-4					
Solvent Purf. Room	80	0.0	.32	.11	36 ✓
Cascades	93	0.0	.14	.05	4 ✓
Evaporation Feed Rm.	13	0.0	.14	.05	2 ✓
Solvent Dumping Area	12	0.0	.10	.03	0 ✓
Chem. Recovery Area	29	0.0	.10	.05	0 ✓
Blender Stations	70	0.0	.26	.04	5
Bldg. 9201-2	297				47
2nd Floor Lab	6	0.0	.03	.01	0
Mech. Area	10	0.0	.49	.09	2
C. T. F. Maint.	14	0.0	.10	.02	0
Large Colex	11	0.6	.20	.09	3
Colex	14	0.0	.10	.03	0
C. T. F. Area	39	0.0	.30	.07	8
	14				13


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE September 8, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO G. H. Clewett J. W. Ebert SUBJECT Weekly Solvent Report
L. P. Twichell C. R. Sullivan, Jr., M. D.
L. W. Bagwell H. T. Kite
G. W. Mitchell Joe Williams
G. A. Strasser J. M. Lister
H. M. McLeod, Jr. R. D. Williams
J. W. Strohecker M. J. Fortenberry
W. K. Whitson Edw. G. Struxness, Y12RC
R. C. Kelly File

The following air samples were taken during the week ending September 6, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Bldg. 9201-2					
2nd Floor Lab	6	0.0	.02	.01	0
Mech. Area	10	.03	.12	.06	1
C. T. F. Maint.	14	0.0	.10	.03	0
Large Colex	22	0.0	.22	.07	3
Colex	28	0.0	.47	.07	4
C. T. F.	52	0.0	.83	.16	24
Bldg. 9202	32				24
1st Floor	18	.02	.48	.19	14
Mezz.	18	.09	.50	.19	14
2nd Floor	30	.02	.36	.17	21
3rd Floor	17	.02	.24	.10	7
Penthouse	5	.12	.20	.15	5
Bldg. 9204-4	55				51
Solvent Dumping Area	38	0.0	.39	.04	1 ✓
Solvent Purf. Room	102	0.0	.35	.08	25 ✓
Cascade	97	0.0	.11	.04	1 ✓
Blender Stations	61	0.0	.09	.03	0 ✓
Chem. Recovery	38	0.0	.18	.06	5 ✓
Evap. Feed Make-up Area	11	0.0	.05	.02	0 ✓

W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO
LOCATION

List

DATE

September 14, 1953

ANSWERING LETTER DATE

ATTENTION
COPY TO


G. W. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchel
G. A. Strasser
H. M. McLeod, Jr.

R. C. Kelly
C. R. Sullivan, Jr., M. D.
H. T. Kite
Joe Williams
M. J. Fortenberry
Edw. G. Struxness, Y12RC
File ~~100-243~~

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending September 13, 1953 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Large Colex	10	.03	.12	.07	1
Colex	14	0.0	.15	.04	1
C. T. F.	39	0.0	.39	.14	23
<u>Bldg. 9202</u>	63				25
1st Floor	18	.04	.57	.23	15
Mezz.	18	.06	.52	.29	16
2nd Floor	30	.04	.40	.19	24
3rd Floor	18	.03	.32	.18	14
Penthouse	4	.18	.37	.31	4
	38				75


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE September 21, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO

G. W. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchell
G. A. Strasser
H. M. McLeod, Jr.

R. C. Kelly
C. R. Sullivan, Jr., M. D.
H. T. Kite
Joe Williams
M. J. Fortenberry
Edw. G. Struxness, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending September 20, 1953, to determine the level of solvent contamination in the various areas listed below

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL
		Low	High	Avg.	
Bldg. 9201-2					
Colex	14	0.0	.16	.06	4
Large Colex	10	0.0	.03	< .01	0
C. T. F.	52	0.0	1.2	.13	19
Bldg. 9202	<u>36</u>				<u>23</u>
1st. Floor	30	.02	.60	.17	21
Mezz.	30	.02	.60	.15	17
2nd. Floor	50	0.0	.48	.16	35
3rd Floor	30	.07	.28	.16	25
Penthouse	4	.09	.11	.10	2
	<u>144</u>				<u>100</u>

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE September 29, 1953

ANSWERING LETTER DATE

ATTENTION
COPY TO

SUBJECT Weekly Solvent Report

G. W. Clewett	R. C. Kelly
L. P. Twichell	C. R. Sullivan, Jr., M.D.
L. W. Bagwell	H. T. Kite
G. W. Mitchell	Joe Williams
G. A. Strasser	M. J. Fortenberry
H. M. McLeod, Jr.	Edw. G. Struxness, Y12RC
	File

The following air samples were taken during the week ending September 27, 1953, to determine the level of solvent contamination in the various areas listed below

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex	14	0.0	.12	.05	2
Large Colex	10	0.0	.04	.02	0
C. T. F.	52	.02	.49	.12	20
<u>Bldg. 9202</u>	76				22
1st. Floor	18	.11	.40	.23	18
Mezz.	18	.06	.31	.19	15
2nd. Floor	30	.04	.34	.17	28
3rd. Floor	18	.10	.28	.18	16
	84				47

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(**INSERT NAME**) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE October 6, 1953

ANSWERING LETTER DATE


ATTENTION
COPY TO

SUBJECT

G. W. Flack	R. C. Kelly	Weekly Solvent Report
G. W. Clewett	C. R. Sullivan, Jr., M.D.	
L. P. Twitchell	H. T. Kite	
L. W. Bagwell	Joe Williams	
G. W. Mitchell	M. J. Fortenberry	
G. A. Strasser	Edw. G. Struxness, Y12RC	
H. M. McLeod, Jr.	File	

The following air samples were taken during the week ending October 4, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex	14	0.0	.26	.07	2
Large Colex	10	0.0	.30	.09	3
C. T. F.	39	.03	.35	.11	17
	<u>63</u>				<u>22</u>
<u>Bldg. 9202</u>					
1st Floor	24	.06	.44	.22	22
Mezz. Floor	24	.06	.54	.21	19
2nd. Floor	40	.06	.36	.18	32
3rd Floor	24	.06	.21	.12	17
	<u>112</u>				<u>90</u>


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE October 12, 1953

ANSWERING LETTER DATE


ATTENTION

COPY TO G. W. Flack R. C. Kelly
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending October 11, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples >MPL of .1 mg/M
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
C. T. F.	39	.03	.41	.15	22
Colex	14	0.0	.16	.05	1
Large Colex	10	0.0	.53	.16	4
<u>Bldg. 9202</u>					
1st Floor	18	.04	.19	.12	11
Mezz Floor	18	.04	.24	.16	13
2nd Floor	30	.06	.30	.17	25
3rd Floor	18	.10	.22	.14	16


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE October 19, 1953

ANSWERING LETTER DATE

ATTENTION


COPY TO

G. W. Flack	R. C. Kelly
G. W. Clewett	C. R. Sullivan, Jr., M. D.
L. P. Twichell	H. T. Kite
L. W. Bagwell	Joe Williams
G. W. Mitchell	M. J. Fortenberry
G. A. Strasser	Edw. G. Struzness, Y12RC
H. M. McLeod, Jr. File	

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending October 18, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex	28	0.0	.37	.12	14
C. T. F.	26	.03	.59	.17	14
<u>Bldg. 9202</u>					
1st Floor	6	.06	.30	.17	5
Mezz. Floor	6	.11	.26	.19	6
2nd Floor	10	.04	.21	.13	6
3rd Floor	6	.15	.20	.17	6


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE October 26, 1953

ANSWERING LETTER DATE

ATTENTION


COPY TO

G. W. Flack R. C. Kelly
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File ✓

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending October 25, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Product and Research	10	.03	.15	.09	4
Large Colex	22	0.0	.75	.27	15
Colex	42	.03	.45	.18	29
C. T. F.	39	0.0	.39	.12	19
C. T. F. Maint.	14	.04	.12	.10	7
<u>Bldg. 9202</u>					
1st. Floor	24	.06	.48	.22	23
Mezz. Floor	24	0.0	.30	.18	21
2nd. Floor	220	.04	.58	.24	202
3rd. Floor	24	.07	.28	.17	22


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO
LOCATION

List

DATE November 2, 1953

ANSWERING LETTER DATE

ATTENTION


COPY TO

G. W. Flack	R. C. Kelly
G. W. Clewett	C. R. Sullivan, Jr., M. D.
L. P. Twichell	H. T. Kite
L. W. Bagwell	Joe Williams
G. W. Mitchell	M. J. Fortenberry
G. A. Strasser	Edw. G. Struxness, Y12RC
H. M. McLeod, Jr.	File /

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending November 1, 1953 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Large Colex	44	.03	.43	.19	34
Colex	42	0.0	.37	.18	33
C. T. F.	39	0.0	.37	.13	22
1st. Floor Lab.	8	.02	.06	.03	0
<u>Bldg. 9202</u>					
1st. Floor	12	.11	.31	.20	12
Mezz. Floor	12	.06	.34	.15	9
2nd. Floor	20	0.0	.18	.10	9
3rd. Floor	12	0.0	.14	.06	3


 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department

SH:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE November 9, 1953

ANSWERING LETTER DATE

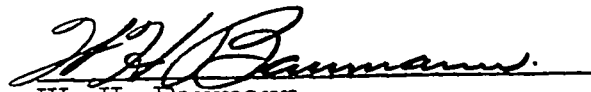
ATTENTION
COPY TO

SUBJECT Weekly Solvent Report

G. W. Flack	R. C. Kelly
G. W. Clewett	C. R. Sullivan, Jr., M.D.
L. P. Twichell	H. T. Kite
L. W. Bagwell	Joe Williams
G. W. Mitchell	M. J. Fortenberry
G. A. Strasser	Edw. G. Struxness, Y12RC
H. M. McLeod, Jr.	File

The following air samples were taken during the week ending November 8, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex	28	0.0	.37	.15	15
C. T. F.	26	0.0	.59	.15	18
<u>Bldg. 9202</u>					
1st Floor	12	.06	.30	.16	10
Mezz. Floor	12	.11	.31	.17	12
2nd Floor	20	.04	.36	.13	11
3rd Floor	12	0.0	.26	.10	5


 W. H. Baumann
 Industrial Hygiene Section
 Health Physics Department

SH:cs

INTE -COMPANY CORRESPONDENCE

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TO List
LOCATION

DATE November 17, 1953

ANSWERING LETTER DATE

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COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File ✓

The following air samples were taken during the week ending November 15, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Bldg. 9202 OREX	84	0.0	.46	.20	74*
Bldg. 9201-2					
C. T. F.	65	.11	1.06	.23	65**
C. T. F. Maint. Area	14	0.0	.08	.05	0
Colex	56	0.0	.26	.14	35
Large Colex	32	.08	.41	.25	31**

* From past experience the high levels of air solvent concentration are contributed to poor housekeeping. It is suggested that additional emphasis be placed on housekeeping.

** A special study is to be made of these area's to determine why solvent concentration have been excessively high for the last three weeks.

W. H. Baumann/cs
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:MS:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE November 20, 1953

ANSWERING LETTER DATE

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COPY TO

G. W. Flack
G. W. Clewett
L. P. Twichell
L. W. Bagwell
G. W. Mitchell
G. A. Strasser
H. M. McLeod, Jr.

R. C. Kelly
C. R. Sullivan, Jr., M. D.
H. T. Kite
Joe Williams
M. J. Fortenberry
Edw. G. Struxness, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending November 22, 1953 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9202</u> OREX	56	0.0	.58	.19	44*
<u>Bldg. 9201-2</u> C. T. F.	65	0.0	.75	.10	15
Small Colex	77	0.0	.33	.09	25**
Large Colex ¹	66	0.0	.58	.17	29**

¹ Continuous air monitor, east end of large Colex, average concentration for the week ending November 22, 1953 .12 mg/M³.

* Special emphasis should be placed on better housekeeping.

** Due to maintenance being performed on the ventilation system of building 9201-2, large colex and small colex have been without general ventilation during the greatest portion of the sampling period.

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:MS:cs

INTER-COMPANY CORRESPONDENCE

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TO List
LOCATION

DATE November 30, 1953

ANSWERING LETTER DATE


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G. W. Clewett C. R. Sullivan, Jr., M.D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y-12RC
H. M. McLeod, Jr. File ✓

The following air samples were taken during the week ending November 29, 1953, to determine the level of solvent contamination in the various areas listed below:

LOCATION	TOTAL # SAMPLES	SOLVENT AIR CONC. mg/M ³			# SAMPLES >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9201-2</u>					
C.T.F.	52	0.0	.47	.09	15
Small Colex	64	0.0	.27	.07	12
Large Colex Tray	60	0.0	.59	.23	42*
Large Colex Column	9	.06	.18	.11	3
<u>Building 9202</u>					
OREX	56	.10	.77	.28	55

* High findings were centered around east end of tray for sample period.


W. H. Baumann,
Industrial Hygiene Section
Health Physics Department

SH:ms

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO List
LOCATION

DATE December 7, 1953

ANSWERING LETTER DATE

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G. W. Flack	R. C. Kelly
G. W. Clewett	C. R. Sullivan, Jr., M. D.
L. P. Twitchell	H. T. Kite
L. W. Bagwell	Joe Williams
G. W. Mitchell	M. J. Fortenberry
G. A. Strasser	Edw. G. Struxness, Y-12RC
H. M. McLeod, Jr.	File


SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending December 6, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	111	0.0	.77	.21	86*
<u>Building 9201-2</u> C. T. F.	52	0.0	.51	.11	19
Large Colex Tray	60	0.0	.79	.25	34**
" " Tower	36	0.0	.28	.14	25
Small Colex	59	0.0	.25	.06	12

* It has been observed that compressed air is being used to clean equipment. This is a bad housekeeping practice.

** The highest concentration for the sampling period were obtained within a 25' radius of the east end of tray. To improve this condition, it is suggested that source ventilation be employed on equipment within this area.


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:MS:cs

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INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE December 16, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File.

The following air samples were taken during the week ending December 13, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	94	0.0	.69	.21	83*
<u>Building 9201-2</u> Large Colex Tray	59	0.0	.66	.25	39**
Small Colex	39	0.0	.23	.11	21
C. T. F.	36	0.0	.33	.11	20
Large Colex Tower	27	0.0	.41	.16	22

* An effort should be made to remove all solvent from equipment, as well as the floor.

** Highest concentration are around east of tray. Special emphasis should be placed on better housekeeping in this area.

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

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(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE December 22, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File ✓

The following air samples were taken during the week ending December 20, 1953, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	129	0.0	.40	.17	107
<u>Building 9201-2</u> Large Colex Tower	27	0.0	.47	.15	16
Large Cole Tray	60	0.0	.57	.16	27
C. T. F.	47	0.0	.45	.14	25
Small Colex	39	0.0	.33	.09	17
1st. Lab	8	.02	.12	.09	3

W. H. Baumann
W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office-Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE December 28, 1953

ANSWERING LETTER DATE

ATTENTION

COPY TO G. W. Flack R. C. Kelly SUBJECT Weekly Solvent Report
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y-12RC
H. M. McLeod, Jr. File

The following air samples were taken during the week ending December 27, 1953 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			# Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	110	.06	.83	.32	106
<u>Building 9201-2</u> C. T. F.	33	.02	.30	.15	22
Large Colex Tower	9	.03	.16	.11	5
Small Colex	26	.10	.55	.26	25
Large Colex Tray	30	.03	.64	.19	18

Original signed by W. H. Baumann

W. H. Baumann
Industrial Hygiene Section
Health Physics Department

WHB:L:A:cs

DIVISION Industrial Relations	DEPARTMENT Medical Department	SECTION Industrial Hygiene	BUILDING Bldg. 9706-2	ROOM 34
DESCRIPTION OF RECORDS		FROM	THROUGH	CODE NUMBER
Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z		1951	1957	2090-IH-4 Y-12 2090-IH-4
BOX NUMBER <u>2</u> OF <u>5</u>		LOCATION IN RECORDS CENTER		
CLASS OF FILE		SECTION	TIER	DR.
RECORD <input checked="" type="checkbox"/> NON-RECORD <input type="checkbox"/>		Indef.	20	9
		RECORDS VERIFIED BY:		DATE
		Bill Everett		2/14/58
TRANSFER OF RECORD				

SOLVENT

Weekly Reports

1952

from CHR2-0194

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE January 4, 1954

ANSWERING LETTER DATE

ATTENTION

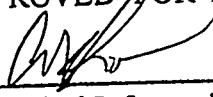
SUBJECT Weekly Solvent Report

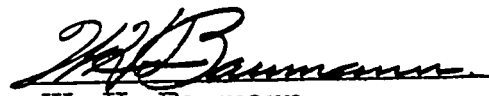
COPY TO G. W. Flack R. C. Kelly
G. W. Clewett C. R. Sullivan, Jr., M. D.
L. P. Twichell H. T. Kite
L. W. Bagwell Joe Williams
G. W. Mitchell M. J. Fortenberry
G. A. Strasser Edw. G. Struxness, Y12RC
H. M. McLeod, Jr. File

The following air samples were taken during the week ending January 3, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			#Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9202</u> OREX	120	.01	.91	.25	98
<u>Building 9201-2</u>					
Large Colex Tray*	30	0.0	.37	.15	17
2nd Floor Dev. Area	11	.11	.53	.30	11
Large Colex Tower	9	.09	.20	.16	8
Small Colex	26	.16	.49	.32	26
C.T.F.	24	0.0	.61	.18	17

WHB:GBA:cs

APPROVED FOR PUBLIC RELEASE	
	10/20/95
Technical Information Office	Date


W. H. Baumann
Industrial Hygiene Section
Health Physics Department

INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE April 12, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray
G. A. Strasser
R. F. Hibbs
~~G. H. Clewett~~
L. W. Bagwell
G. W. Mitchell
~~H. M. McLeod, Jr.~~
/ /

J. W. Ebert
C. R. Sullivan, Jr., M. D.
H. T. Kite
L. C. Emerson, Y12RC
File

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending April 11, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9202</u> <u>OREX*</u>					
Mezzanine	7	.06	.11	.09	3
2nd. Floor	10	.03	.15	.07	1
3rd. Floor	6	.03	.09	.06	0
<u>Bldg. 9201-2</u>					
Colex Tray #1	39	.02	.31	.08	8
Colex Tray #2	16	.04	.11	.07	4
Colex Column	20	.04	.16	.09	7
P. T. F. Area	26	.04	.22	.08	6
2nd. Floor Development Area	30	.02	.17	.08	6
Product Finishing 1st. Floor	9	.02	.03	.02	0

* This process is no longer in operation. These samples were taken to determine the effectiveness of the decontamination attempted in this area. The results indicate that further decontamination is needed.

C. M. West
C. M. West
Health Physics Department

INTER. COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE April 20, 1954

ANSWERING LETTER DATE

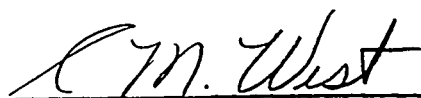
ATTENTION

COPY TO J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending April 18, 1954. to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex Column	20	.03	.15	.05	1
Colex Tray # 1	39	.02	.12	.04	1
Colex Tray # 2	16	.04	.08	.05	0
2nd. Floor Development Area	30	.02	.16	.07	4
P. T. F.	26	.04	.11	.07	1


C. M. West
Health Physics Department

GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE April 27, 1954

ANSWERING LETTER DATE

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COPY TO J. P. Murray J. W. Ebert
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R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending April 25, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
Colex Column	12	.04	.11	.07	1
P.T.F. Area	26	.04	.67	.17	18*
2nd. Floor Development Area	30	0.0	.23	.07	5
Colex Tray #1	26	.02	.14	.06	2
Colex Tray #2	24	.03	.11	.06	1

* In the P.T.F. area, 18 of the 26 readings were over the MPL due to solvent spills at all levels.

C. M. West
C. M. West
Health Physics Department

GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO List
LOCATION

DATE May 3, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray J. W. Ebert ~
G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs ~ H. T. Kite ~
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell ~ File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending May 3, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
P. T. F. Area	39	.03	.40	.10	11*
2nd Floor Development Area	45	.01	.40	.07	5**
Colex Column	29	.05	.12	.07	2
Colex Tray #2	24	.03	.14	.07	2
Colex Tray # 1	39	0.0	.09	.04	0

* Seven of the high reading were due to solvent spills from two pumps torn down on the Mezz. floor of the P. T. F. area.

** The high reading in 2nd. floor development area was from the sink in Bay #2.

C M West

C. M. West
Health Physics Department

GBA:cs

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INTER-COMPANY CORRESPONDENCE

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TO List
LOCATION

DATE May 10, 1954

ANSWERING LETTER DATE

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G. A. Strasser C. R. Sullivan, Jr., M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

The following air samples were taken during the week ending May 9, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples <MPL of .1 mg/M ³
		Low	High	Avg.	
Colex Column	19	.04	.13	.07	2
Colex Tray #2	32	.01	.13	.06	2
2nd Floor Development Area	45	0.0	.12	.04	1
Colex Tray #1	39	0.0	.19	.05	4
P. T. F. Area	39	.02	.25	.09	11*
1st Floor Lab.	10	0.0	0.0	0.0	0

* Housekeeping in this area is poor.

C. M. West

C. M. West
Health Physics Department

WR:JL:mc

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE May 17, 1954

ANSWERING LETTER DATE

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R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell


SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending May 16, 1954, to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			No. of Samples >MPL of .1 mg/M ³
		Low	High	Avg.	
2nd. Floor Development Area	45	0.0	.17	.04	4
Colex Tray #1	39	0.0	.33	.06	6
Colex Tray #2	8	.07	.24	.12	4**
Colex Column	10	.02	.08	.04	0
P.T.F. Area	39	.03	.40	.12	20*
Product Finishing	15 156	0.0	0.0	0.0	0

* P.T.F. Area - The high air findings in this area are due to spills and tank #30 being open.

** Colex Tray #2 - Solvent pump was torn down and solvent spilled on floor the day these samples were taken.


C. M. West
Health Physics Department

GBA:cs

INTERCOMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE May 24, 1954

ANSWERING LETTER DATE

ATTENTION


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J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending May 23, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			Per Cent > MPL of .1 mg/M ³
		Low	High	Avg.	
Colex Tray #1	77	0.0	.19	.06	12
P.T.F. Area	77	.04	.45	.16	58
2nd. Floor De- velopment	66	.02	.25	.09	41
Colex Column	10	.04	.09	.07	0
Colex Tray #2	8	.05	.08	.07	0
	278				11


C. M. West
Health Physics Department

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DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. <u>MS/CHR2-0194</u>	Author's Telephone No. <u>6-0263</u>	Acct. No. <u>2366000 3</u>	Date of Request <u>10/18/95</u>
Unclassified Title: <u>SOLVENT: WEEKLY REPORTS (1954) (2090-1H-4)</u> <u>A-2, 9202</u>			

Author(s) Requestor: Steve Wiley

Jan-May 1954

TYPE: ☐ Formal Report ☐ Informal Report ☐ Progress/Status Report ☐ Co-Op Report ☐ Thesis/Term Paper
☐ Oral Presentation (Identify meeting, sponsor, location, date): _____

☐ Journal Article (Identify Journal): _____

☒ Other (Specify): To Be Released to ChemRisk, Phase II

Document will be published in proceedings ☒ No ☐ Yes
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 Document has patent or invention significance ☐ No ☐ Yes (Identify) _____
 Document has been previously released ☒ No ☐ Yes (Reference) _____

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Title(s): U Abstract: —

DOCUMENT: Level U Category —
RSaunders Jr 10/19/95
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MS J. Wiley 10/18/95
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Meetings, Procedures, Solvent, Exposures, Stack Sampling, Uranium, etc. Listing of all folders included in this box enclosed. M through Z		1951	1957	2000-11-1 Y-12 2090-IH-4
BOX NUMBER <u>2</u> OF <u>4</u>		LOCATION IN RECORDS CENTER SECTION <u>20</u> TIER <u>9</u> DR. <u>16</u> RECORDS VERIFIED BY: <u>Bill Everett</u> DATE <u>2/14/58</u>		
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1954

SOLVE^{mem}
Weekly Report

INTEF COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE June 3, 1954

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT *Weekly Solvent Report*

The following air samples were taken during the week ending May 30, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Colex Tray No. 1	68	.03	.25	.10	29
P. T. F. Area	85	.04	.31	.11	38
2nd Floor Development Area	68	.01	.25	.06	15
Colex Column	17	.04	.19	.10	47*
Colex Tray No. 2	33	.05	.38	.19	85*

* Colex Tray No. 2--This tray has been closed down and was started up again this week. High readings were recorded as follows:

<u>Location</u>	<u>mg/M³</u>
Over Pump J - 207A	.38
Over Titration Table	.34 (Sol. salvage stored in a tray)
Over East End of Tray	.32
Over Sink	.24 (Sol. stored in can in sink)

C. M. West
C. M. West
Health Physics Department

ER:JL:mc

INTER COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE June 8, 1954

ANSWERING LETTER DATE

ATTENTION


COPY TO J. P. Murray J. W. Ebert SUBJECT Weekly Solvent Report
G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y-12RC
L. W. Bagwell File
G. W. Mitchell

The following air samples were taken during the week ending June 6, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total # Samples	Solvent Air Conc. mg/M ³			Per Cent > MPL of .1 mg/M ³
		Low	High	Avg.	
M. C. T. F. Area*	49	.02	.13	.06	6
Colex Tray #2	34	.01	.09	.05	0
Colex Tray #2	16	.08	.16	.11	63
P. T. F. Area	34	.03	.29	.09	26
2nd. Floor Development Area	34	.02	.14	.06	6
Instrument Shop**	8	.11	.14	.12	100
2nd. Maintenance Shop	4	.02	.09	.05	0

* Multiple Column Testing Facility started this week.

** High levels in instrument shop, due to poor ventilation, after windows were opened readings were lowered to zero.


C. M. West
Health Physics Department

GBA:cs

INTE. COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS COMPANY

LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO
LOCATION

List

DATE June 14, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO

J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending June 13, 1954 to determine the level of solvent contamination in the various areas listed below:

Location - 9201-2	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
Colex Tray No. 1	51	0.0	.12	.04	0
Colex Tray No. 2	34	0.0	.31	.10	24
Colex Tray No. 3	6	.02	.10	.06	0
MCTF Area	34	0.0	.15	.06	12
P. T. F. Area	34	.03	.17	.08	24
2nd Floor Development Area	51	.02	.24	.06	12



C. M. West

Health Physics Department

ER:JL:mcm

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P
OAK RIDGE, TENN.

TO List
LOCATION

DATE June 21, 1954

ANSWERING LETTER DATE

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J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr.. M. D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending June 20 1954, to determine the level of solvent contamination in the various areas listed below:

Location - 9201-2	Total No. Samples	Solvent Air Conc. mg/M ³			Per cent of Samples > MPL of .1 mg/M
		Low	High	Avg.	
2nd Floor Development Area	68	.02	.24	.08	24
Colex Tray No. 1	17	.03	.12	.06	6
Colex Tray No. 2	18	.01	.13	.06	11
M. C. T. F. Area	16	.04	.14	.07	6
Mechanical Shop	10	.04	.06	.05	0
1st Floor Lab	13	0.00	0.00	0.00	0

C M. West
C. M. West
Health Physics Department

JL:mcm

INTER-COMPANY CORRESPONDENCE

EVERT
NAME
COMPANY CARBIDE AND CARBON CHEMICALS COMPANY
LOCATION Post Office Box P
OAK RIDGE, TENN.

TO List
LOCATION

DATE June 28, 1954

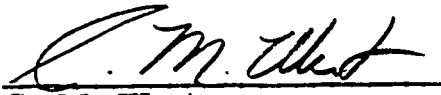
ANSWERING LETTER DATE

ATTENTION

TO J. P. Murray G. A. Strasser R. F. Hibbs L. P. Twichell L. W. Bagwell G. W. Mitchell	J. W. Ebert C. R. Sullivan, Jr., M. D. H. T. Kite L. C. Emerson, Y12RC File	SUBJECT Weekly Solvent Report
--	---	--------------------------------------

The following air samples were taken during the week ending June 27, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
2nd. Floor Development Area	51	.04	.21	.09	35
Colex Tray #1	51	.02	.29	.07	12
Colex Tray #2	17	.02	.27	.10	24
P.T.F. Area	35	.04	.28	.10	34
M.C.T.F. Area	66	.04	.19	.07	11


 C. M. West
 Health Physics Department

GBA:cs

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 6, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert SUBJECT Weekly Solvent Report
G. A. Strasser C. R. Sullivan, Jr., M.D. Bldg. 9201-2
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y-12RC
L. W. Bagwell File
G. W. Mitchell

The following air samples were taken during the week ending July 4, 1954, determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
M.C.T.F. Area	60	.03	.18	.08	28
Colex Tray #1	48	.01	.12	.05	2
Colex Tray #2*	31	.08	.23	.13	58
Colex Tray #3	8	0.0	.09	.04	0
P.T.F. Area	34	.03	.35	.09	18
2nd. Floor Development Area	34	.04	.23	.07	12

* Colex Tray #2 - Floor in this area is contaminated.

C. M. West
C. M. West
Health Physics Department

GBA:cs

INTEI COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 12, 1954

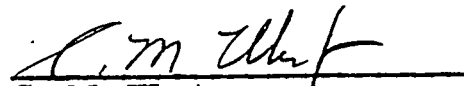
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COPY TO J. P. Murray J. W. Ebert SUBJECT Weekly Solvent Report
G. A. Strasser C. R. Sullivan, Jr., M.D. Bldg. 9201-2
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC ✓
L. W. Bagwell File
G. W. Mitchell

The following air samples were taken during the week ending July 11, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of 0.1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
2nd. Floor Development Area	34	.02	.24	.08	18
Colex Tray #1	34	.02	.13	.07	9
Colex Tray #2	34	.02	.19	.07	21
M.C.T.F.	17	.05	.13	.08	12
P.T.F.	51	.05	.22	.11	53


C. M. West
Health Physics Department

L:R:cs

INTE. COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 23, 1954

ANSWERING LETTER DATE

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G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchel

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending July 18, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
2nd. Floor Development Area	17	.02	.14	.06	12
Colex Tray #1	17	.02	.17	.07	18
Colex Tray #2	34	.02	.15	.06	3
Colex Tray #3	8	.03	.07	.06	0
P.T.F. Area	28	.04	.23	.11	46
M.C.T.F. Area	44	.04	.32	.10	23

C. M. West

C. M. West
Health Physics Department

R:L:ej

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE July 27, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO


J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
G. W. Mitchell

SUBJECT Weekly Solvent Report

The following air samples were taken during the week ending July 25, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex Tray #1	17	.03	.19	.10	41
Colex Tray #2	35	.04	.33	.10	40
P.T.F. Area	34	.04	.30	.11	50
M.C.T.F. Area	44	.06	.19	.10	36
2nd. Floor Development Area **	17	.06	.47	.20	71

** High average due to solvent spills while testing new equipment for trays.


C. M. West
Health Physics Department

L:R:ej

INTE COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 3, 1954

ANSWERING LETTER DATE

ATTENTION
COPY TO


J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
R. A. Walker

SUBJECT Weekly Solvent Report
Building 9201-2

The following air samples were taken during the week ending August 1, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex Tray #1	34	.02	.14	.07	21
Colex Tray #2	17	.04	.17	.07	29
P.T.F. Area	34	.04	.18	.08	12
M.C.T.F. Area	34	.05	.17	.10	29
2nd. Floor Development Area*	17	.04	.29	.16	71

* Labs #1 and #2 were moved from this area during the week and the area will have to be cleaned up before readings will decrease.


C. M. West
Health Physics Department

L:R:ej

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 10, 1954

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M.D.
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC-~~12977~~
L. W. Bagwell File
R. A. Walker

SUBJECT Weekly Solvent Report
Building 9201-2

The following air samples were taken during the week ending August 8, 1954 to determine the level of solvent contamination in the various areas listed below:


Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex Tray #1	34	.04	.37	.18	50
Colex Tray #2	17	.18	.27	.22	100
P.T.F. Area	34	.04	.53	.16	76
2nd. Floor Develop- ment Area	34	.03	.37	.14	65
1st Floor Lab	12	.04	.07	.05	0

Colex Tray #1 - Seventeen samples were taken in this area on August 4, the average being .29 mg/l, while caustic fumes were being carried into the area from the outside.

Coles Tray #2 - This area also sampled on the 4th while caustic was being carried into the area.

P.T.F. Area - Machinist working on solvent pump while area was being sampled, solvent spilled at all three levels.

2nd Floor Development Area - The two lab areas continue to show a high solvent air concentration.


C. M. West
Health Physics Department

L:R:ej

INTE. COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 16, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert
G. A. Strasser C. R. Sullivan, Jr., M.D. SUBJECT Weekly Solvent Report
R. F. Hibbs H. T. Kite Building 9201-2
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
R. A. Walker


The following air samples were taken during the week ending August 15, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > .PL of .1 mg/M ³
		Low	High	Avg.	
<u>Bldg. 9201-2</u>					
Colex Tray #1	51	.05	.34	.14	53*
P.T.F. Area	34	.03	.19	.09	26
M.C.T.F.	68	.08	.24	.14	30**
2nd. Floor Development Area	52	.04	.40	.15	62***

* Colex Tray #1 - Housekeeping very poor - Solvent spills on floor during time of sampling.

** M.C.T.F. Area - Ran high during time of sampling due to solvent spills and poor air circulation. Housekeeping is poor in this area.

*** 2nd. Floor Development Area - Ran somewhat higher since new operation was installed and the equipment torn out on the north side of area.


C. M. West
Health Physics Department

L:R:ej

INTE. COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE August 30, 1954

ANSWERING LETTER DATE

ATTENTION
COPY TO

J. P. Murray
G. A. Strasser
R. F. Hibbs
L. P. Twichell
L. W. Bagwell
R. A. Walker


J. W. Ebert
C. R. Sullivan, Jr., M.D.
H. T. Kite
L. C. Emerson, Y12RC ✓
File

SUBJECT Weekly Solvent Report
Building 9201-2

The following air samples were taken during the week ending August 29, 1954 to determine the level of solvent contamination in the various areas listed below:

Location	Total No. Samples	Solvent Air Conc. mg/M ³			Per Cent of Samples > MPL of .1 mg/M ³
		Low	High	Avg.	
<u>Building 9201-2</u>					
Colex Tray #1	47	.03	.17	.09	36
Colex Tray #2	14	.15	.35	.24	100*
P.T.F. Area	34	.05	.19	.11	47
M.C.T.F.	68	.08	.21	.13	74
2nd. Floor Development Area	33	.04	.39	.12	42
Maintenance Shop	17	.04	.15	.07	18

* Colex Tray #2 - Sampled this Area while tray was not in operation high readings due to additional power being used in tray.


C. M. West
Health Physics Department


L:R:ej

Y/HG-0082

M-835

Solvent Weekly Reports
For Building 9201-2
And 9202 During 1954

C. M. West
W. H. Baumann
Health Physics Department

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202
12/19

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List DATE October 12, 1954
LOCATION
ANSWERING LETTER DATE
ATTENTION
COPY TO J. P. Murray J. W. Ebert SUBJECT Monthly Solvent Report
G. A. Strasser L. J. LaFrance Building 9201-2
R. F. Hibbs H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
R. A. Walker

Y/HG-0067/1

This is the first of a series of Monthly Solvent Air Reports. The following air samples were taken during the month of September, 1954 to determine the levels of solvent contamination in the various areas listed below:

Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	Percent of Samples >MPL of .1 mg/M ³			No. Wks. Conc. Exceeded MPL
Colex Tray #1	5	162	.09	14.58	26	+2	0
Colex Tray #2	1	16	.09	1.44	31	5	0
PTF #1	5	176	.12	21.12	46	41	4
PTF #2	3	44	.15	6.6	59	26	3
1st Floor N. PTF Area #2	1	30	.26	7.8	100	30	1
2nd Floor Development	4	121	.07	8.47	18	22	1
M.C.T.F.	5	223	.11	24.53	49	109	3
Inst. Shop 2nd Floor	1	6	.33	1.98	100	6	1
Maint. Shop	2	33	.06	1.98	0	0	0

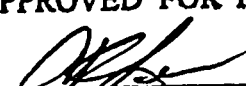
761


88.56

221

0.13

48

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Technical Information Office Date 4/5/54


C. M. West
Health Physics Department

MS:ej

2CE
11/16/54

INTEI COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE November 9, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert
W. C. Moore L. J. LaFrance
W. A. Pfeiler H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
R. A. Walker

SUBJECT Monthly Solvent Report
Building 9201-2

Y/HG-0067/2

The following air samples were taken during the month of October, 1954 to determine the levels of solvent contamination in the various areas listed below:

Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	Percent of Samples >MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Colex Tray #1	4	104	.08	20	1
Colex Tray #2	1	30	.11	50	1
Colex Tray #3	1	6	.15	33	1
M.C.T.	4	306	.12	63	2
PTF #1	4	152	.13	43	4
PTF #2	2	25	.15	92	2
1st Floor Area North					
PTF #2	1	5	.09	20	0
Instrument Shop	1	5	.16	100	1
Electrical Shop	1	5	.08	0	0
Mechanical Shop	1	16	.08	13	0
2nd Floor Dev. Area	4	86	.04	2	0
Prod. Finish.	1	9	0.0	0	0
1st Floor Lab	1	13	0.0	0	0

APPROVED FOR PUBLIC RELEASE

Technical Information Office Date 4/5/54

C. M. West
C. M. West
Health Physics Department

MS:ej

202
12/21

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS COMPANY LOCATION Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE December 10, 1954

ANSWERING LETTER DATE

ATTENTION

COPY TO J. P. Murray J. W. Ebert SUBJECT Monthly Solvent Report
W. C. Moore L. J. LaFrance Building 9201-2
W. A. Pfeiler H. T. Kite
L. P. Twichell L. C. Emerson, Y12RC
L. W. Bagwell File
R. A. Walker

Y/4G-0067/3

The following air samples were taken in Building 9201-2 during the month of November, 1954, to determine the levels of solvent contamination in the various areas listed below:

Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	Percent of Samples > MPL of .1 mg/M ³	No. Wks. Conc. Exceeded MPL
Colex Tray No. 1	4	107	.08	31	0
Colex Tray No. 2	4	53	.17	89	4
PTF No. 1	4	124	.14	74	4
PTF No. 2	4	20	.10	40	1
MCT	4	163	.14	72	4
1st Floor Area North PTF No. 2	4	22	.23	86	3
Trap Door 1st Floor at Col. J22	3	3	1.12 ✓	100	3
Instrument Shop	3	14	.18	100	3
Electrical Shop	1	4	.19	100	1
Mechanical Shop	1	17	.03	0	0
2nd Floor Dev. Area	4	60	.05	2	0
Foreman's Office (2nd Floor)	1	4	.15	100	1
Water Fountain Area (2nd Floor)	1	4	.10	25	0

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WR/j

C. M. West
Health Physics Department

Technical Information Office 4/5/54
CORRESPONDENCE ONLY

266
1/3
INTEL COMPANY CORRESPONDENCE

(INSERT NAME) **COMPANY** CARBIDE AND CARBON CHEMICALS COMPANY **LOCATION** Post Office Box P OAK RIDGE, TENN.

TO List
LOCATION

DATE January 17, 1955

ANSWERING LETTER DATE

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COPY TO

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L. J. LaFrance
H. T. Kite
L. C. Emerson, Y12RC
File

SUBJECT December Solvent Report -
Building 9201-2

Y/HG-0067/4

The following table gives a resume' of the results of spot general air samples taken during the month of December 1954, to determine the levels of solvent air contamination in the areas listed below. Sixty-one percent of all results³ reveal concentrations greater than the Maximum Permissible Limit .1 mg/M³.

Location	Total No. Wks. Sampled	Total No. Samples	Average Sol. Air Conc. mg/M ³	% of Samples > MPL of .1 mg/M ³	No. Weeks Conc. Exceeded MPL
Colex Tray No. 1	5	92	.12	42	2
Colex Tray No. 2	5	46	.16	85	5
Colex Tray No. 3	3	21	.16	67	2
PTF No. 1	5	149	.15	69	4
PTF No. 2	4	15	.13	67	2
MCTF	5	177	.13	64	3
1st Floor Area North of PTF No. 2	4	19	.39	100	4
Trap Door 1st Floor at Col. J22	2	2	1.48	100	2
Sub-Basement	1	10	1.02	100	1
Instrument Shop	2	14	.08	21	1
Electrical Shop	2	9	.10	44	1
Mechanical Shop	2	34	.08	21	0
Foreman's Office (2nd Floor)	3	12	.09	42	1
Water Fountain Area (2nd Floor)	4	29	.11	62	2
2nd Floor Development Area	2	31	.03	0	0

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[Signature]

4/5/54

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The following gives a resume¹ of the results recorded by the continuous type air monitors.

Area	Location	Total No. Days Sampled	Average Sol. Air Conc. mg/M ³	Percent of Days Exceeding MPL .1 mg/M ³
Colex Tray No. 2	Walkway	11	.12	45
1st Floor-North PTF No. 2	Col. J22	11	.51	100

The locations listed in the table below have consistently shown results greater than the Maximum Permissible Limit of .1 mg/M³.

Location	No. Weeks Samples for past 4 months	No. Weeks Conc. Exceeded MPL
Colex Tray No. 2	10	10
PTF No. 1	18	16
MCTF	17	12
North PTF No. 2	9	8
Instrument Shop	7	6


C. M. West
Health Physics Department

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